COMPUTERWORLD

INSIDE

Executive Report -Restructuring IS in the wake of downsizing, Page 71.

In Depth - Holy light waves! Optical computing is on its way, Page 83.

It's here-really. Lotus finally ships Release 3.0 of 1-2-3. Page 4.

Micro Channel endorsed as American Airlines stan-dardizes on 80386-based systems supporting the IBM bus architecture. Page 4.

What a month: Brzezinski bails out of Quaker Onts, Fisher retires from Band One and Sun Co 's IS chief moves on to a home shop ning service. Page 119.



ogy cited in Computerworld beonisn Awards Pages 120, 121.

omputerworld erspectives 1989:

IS organisations can no ger rely on automating



CA buyout binge swallows Cullinet

Uncertainty ends. but deal raises support concerns

BY ROBERT MORAN

Many users of Cullinet Software, Inc.'s IDMS/R database man-agement system resigned them-selves to waiting for further inserves to waiting for further in-formation on what direction Computer Associates Interna-tional, Inc. plans to take with its overlapping DBMS products in the walke of its latest proposed

acquisition last week.

Given that CA already has two other database managers—
CA-Datacom/DB and CA-Universe — some users are worried enough by the change in owner-ship of IDMS/R to reconsider

er options. Sanjay Kumar, CA's vice-esident of strategic planning.

Cullinet turns over: 1,800 employees
 \$202.9 million in revenue for fiscal 1989

 Loss of \$19.8 million in fiscal 1989 Database technology, VAX software

· Application generation tools Vertical market applications . Large, high-profile user base

John Culli CA adds to:

- es worldwide \$1.03 billion in revenue for fiscal 1989 Fiscal 1989 net income of \$163.5 million Marketing cloud
- Mixed user reviews of service and proport following acquisitions · Broad product array

attempted to reasure Collinet users after Monday's announce-ment of the Garden City, N.Y.-based software giant's latest in a long string of approximately 19

"We will continue to enhance and support IDMS/R" and will give customers detailed direc-tions a few weeks after the merger is completed in August, Continued on page 119

Gun-shy users may obt for IBM

ANALYSIS

alt with He stopped, thoug of finally answered. "Bancal pass they're all CA now. A one that aren't yet are pro-

about to be."
Now worth \$1.03 billion and
owing, Computer Associates
centational, Inc. is trying to temper its reputation as the "grand acquisitor" of the soft-ware industry, according to ana-



White knight sweeps up Prime

BY NELL MARGOLIS

An eleventh-hour rescue that an alysts doubted would ever take place did just that Friday when

place did just that Friday when venture capital pioner J. H. Whitney & Co. rode cano the some to save Prime Computer. Inc. from what appeared to be near-vertisin takeover by hostile bidder MAJ Basic Four, Inc. DR. Holdings, Inc., a Dela-ware corporation formed by Whitney, entered into a merger agreement usder which a DR submidisry will offer \$21.50 per thare in cash for approximately have in proper programmed or properties. share in cash for approx 79% of the embattled m

WASHINGTON, D.C. — Amer-ican Airlines and Delta Air Lines and last week they were drop-ping plans to form a computer evation system par

tender offer is slated to start

\$19.50 per share. Only hours be-fore the new offer arrived, MAI Chairman Bennett LeBow wrote

U.S. snips airline link

was to pay American \$650 mil-lion over two years for a 50% stake in the partnership, which would combine Delta's Datas II system with American's Sabre.

Too early for PS/2 users to buy into 486

BY WELLAM BRANDEL

SECOND CTY22

- S-DIGIT 40106 UNIVERSITY MICROFILMS INT

MI 48186

SERIAL PUBLICATIONS

IN THIS ISSLIF

Quotable

SYSTEMS &

flow light at oncoming tem/36 migration traff

25 Associated Grocers stocks mom-and-pop shops' IS shelves.

PCs &

37 Library of Congress jogs its Memory, offering the public access to manuscripts

NETWORKING

49 Rockwell wades into

the ISDN waters, installing cost-reducing, Centrex-like

tographs via compact

23 AS/400 veterans flos

NEWS

4 Users can small out their 1-2-3 Release 3.0 vigil can-dies now: It's here!

American Airlines tches two-year syste

6 Hammer and Co. pres dent nails down IS organi tion theories at Computer

Bush expected to pin-et Sikes for FCC chairs

7 DRAMatics: U.S. ven rs take their oue to fund

10 IBM puts a dab of CICS behind its ESA, hoping to attract more customers to MVS/ESA.

12 Two more sign on for AT&T's Tariff 12. 14 Oracle 6.0 offers one-stop shopping solution for dis-tributed database applica-

17 Alleged backer ring-leader charged with 17

-

OR ALL the hype

of Unix as a stan-

dard operating environment, some recent research from Paine Webber paints a more "standard" emerging standards picture. When asked to list stan-

dards that are requirements for purchases today and in the fu-ture, some 1,000 survey re-spondents listed IBM's SNA and

SAA as No. 1 and 2, respectively. Unix dawdled in a distant third

place, slightly ahead of OSI. The survey further showed "strong development efforts for OS/2 under way, while the Micro Channel loomed increasingly important in IS planning. This trend is bound to produce the Blues for other firms.

over the emergence

MANAGER'S JOURNAL

61 'Change' always jin-gling in IS professionals' nockets.

COMPLITER IMPLISTRY

93 Independent evalua-tion committee whets the ax at beleaguered Miniscribe. 93 Cullinet veteran recalls firm's crary but worthwhile

roller coaster ride. EXECUTIVE REPORT

71 You can't move to smaller platforms without rearranging some assume-

IN DEPTH

83 Switching the light fantastic with optical computing. By Lee Gruenfeld.

DEPARTMENTS 8 News Shorts

20 Editorial 64 Calendar

100 Computer Careers 111 Marketolace

116. Training 118 Stocks 122 Trends

EXECUTIVE BRIEFING

Cullinet users are taking a wait-andsee approach to the proposed acquisition of Cullinet by Computer Associates. Some expressed relief that Cullinet's product line has a future, but others worried about the depth of CA's commitment to support and maintenance. Analysts said IBM may be the surprise winner in the deal because DB2 could become a safe harbor for DBMS buyers. Page 1.

■ More high-level IS departures: Quaker Oats' Ron Brzezinski has left with a generous severance package; John Fisher, con-sidered the father of the ATM and the bank credit card, will retire from Banc One Services; and Sun Co.'s John F. Link will become the top IS executive at QVC Network, a home shopping network. Page 119.

■ It's up to information systems execs to take the lead in bringing users and in-formation technology togeth-er, speakers at the Compu-terworld Perspectives 1999 conference and last week. Several have devised innovado't make the mistake of

ed and looks bug-fr

Aid concert, developers of a system that "ages" photo-ANY CONCERT, GEVENDERS OF A system that "ages" photo-graphs of missing children and overseers of the Passaic River Basin Early Flood Warning Project were among the 11 winners of Computer-world Smithsonian Awards last week. Page 120. tive programs to get users in-

corror. Page 6. Too many corporations are simply such mating old organizational structures instead of looking at computers as an opportuni-ty to create new ones, speak-ers said. Page 6. ers appear to be taking less Lotus meets expecta-tions, shipping 1-2-3 Re-lesse 3.0 a week before its lat-est deadine. Users say it appears to do what Lotus

in complete advantage of software they purchase, inagers say that those usrs are prob

III The Library of Con-grees goes optical as it issueches an ambitious plan to package thousands of its his-torical books, political car-■ It's a daughter! Board, that is, with an I486 chip on it, turning the PS/2 Model 70 Ainto the fastest PC on the irket. IBM's announce-ent of the 486 daughtertorical books, postical car-toons, documents and photos on optical disks. The first col-lection is acheduled to be completed next year. Page oard, combined with a 20% rice cut on the Model 70, is stended to boost IBM's tech-

> Rockwell International
> is phasing in ISDN one
> step at a time. Early applications like modern-pooling arg money now and may d to more ami

ometimes the simple a are the best. A medi-neurer turned a fax ma-into a lifeline by mot-



The Best Di Now Come Conste Of

Finally! Lotus ships delayed Release 3.0

BY DOUGLAS BARNEY

CAMBRIDGE, Mass. - The

ins a Development to be a Development to be a Development to be a Development product reversity tented the loyalty of the ottax contonner hase. Although elieved, many users burned by the release of unstable software wendors were

cautiously optimistic.
To calm fears of bugs and in-compatibility. Lotus officials pointed to their \$15 million in-vestment in testing Release 3.0, which included the running of 11,000 macros. Users inter-viewed have reported no prob-

to date. wh testing and the job of reg the program entirely in riting the program entirely in e C language created several tage-brussing delays. In fact, a mobied Lotus Chairman Jim P. quai called Release 3.0 the noral equivalent of the Boston



otus' 1-2-3 Rolouso 3.0 adds new language, 3-D spreadsheets

Airline FROM PAGE 1

nent spokenman said Friday hat if the airlines agree to drop be plans, it was unlikely that the nitrust suit would be filed. The joint westure plans, an-ounced in February and valued t approximately \$2 billion,

minate one of the five petitors "and therefore ult in higher charges to eats for using CRS per-

However, Ron Allen, chair-m of the board and chaef exec-we officer at Delta, claimed in statement last week that the

artnership had been "designed to operate as an autonomous, inendent entity open to partici-on by other airline and non-

arine participants."

Robert L. Crandall, chairman
and president at American, said
in a prepared statement that the
agreement had been structured agreement had been structured "to satisfy the previously expressed concerns of several de-partments of the U.S. govern-

t about single-carrier own ip of CRS systems." ot attempt to create other joint that sponsor a competing CRS but will continue to offer part-nership interests in Sabre to do-

Northwest felt that such a merger could eventually lead to another wave of consolidation

among sirlines and had argued its position to the Justice Depart-ment, Wayland said. Officials

6=

Red Sor in the World Series " American One of the critical concesne that Lotus made to the oro sions that Lotus made to the pro-gram's girth is its insabity to run on Intel Corp. 8088 and 8086 machines. However, it offers a system that runs under MS-DOS or OS/2, with either operating system able to directly access to 16M bytes of random-access

takes flier on 80386

BY WILLIAM BRANDEL

The mein additions
The key enhancements to Reease 3.0 include a new programning language for developing
compiled and secure spread-American Airlines last week an-nounced it will standardize on systems based on the Intel Corp. 80386 and said it plans to buy 50,000 systems during the next two years from three vendors. BM's Micro Channel Architeccompared and secure spread-sheet applications, a specifica-tion for generating database queries from within a spread-sheet and three-dimensional ture :MCA) was a crucial aspect R. L. Martin, manager of ex-ecutive support systems at Ea-ton Corp., has already used the beta-test version to build a con-

ture MCA) was a crucial aspect of the selection, with American designating IBM and two other MCA supporters as suppliers. Although American would not specify how many of each vendor's product will be chosen, a spokeswoman said that each is guaranteed at least a 10% surranteed at least a 10% surranteed at least a 10% surranteed at least a 10% suppliers.

eta-test version to build a con-oblidation application that uses we data and works well.

In particular, the 3-D and licing facilities appear alluring nough to redesign some key ap-lications to exploit Release 3.0, of the total 50,000-unit purchase.

IBM will supply a range of pystems, including the Personal Systems/2 Model SSSX, a disk-less version of the Model SSSX that is based on the latel 80386SX chip and the PS/2 Model 70, based on intel® 80386. Other selected vendors was "Endo Core. which will pactations to exploit Release 3.0, Martin said.

But for some, Release 3.0 is too late. Instead of twiddling his thumbs, Bob Scheussler said he-helped create a custom pricing application for Rockwell unterta-tional Corp., an application that

would have been perfectly suited for Release 3.0. "We needed this product a year ago," said Scheussier, director of IS techwere Tandy Corp., which will supply its 4000 SX series, and AT&T, with a system based on the 80386 chip, according to the the 80386 cmp, according to the American spokeswoman. The systems replace existing IBM 3270 terminals, she added. The vendors were chosen by a variety of criteria, including sor a competing CRS as well as foreign airlines. Kevin Wayland, a spokesman

a variety of criteria, including the vendor's future technologi-cal direction and MCA but sup-port, she sial: for this reason. Compaq Computer Corp. was not chosen, she indicated.

AT &T's systems will be used by Sabre Tirvel Information Network division travel agency customers, she said IBM's disile-less systems will be headed for American's domestic reserva-tions offices and for Sabre cus-tomers. for Northwest Airlines, said Northwest was pleased with the stice Department's decision. "It was our position that a merger between the computerised reservation systems owned by Delts and American would

have further restricted competi-tion" in the CRS arena. Wayland

The Tandy PCs are expected be used in domestic sirport ter-minals and at certain mainte-

CORRECTIONS

Due to an innocuracy in an AT&T press release, John Miller was incorrectly identified as heading on marketing as well as research and development at AT&T Paradyse (CW, June 5). Miller will actually have responsibility only for R&D, according to a subsequent release from AT&T.

Richard P. Delio is the controller of EG & G, Inc. [CW, June 12]. John R. Dolan is senior vice-president and chief financial offi-cer. George Gartand, corporate director of information systems, reports to Delio.

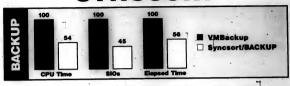
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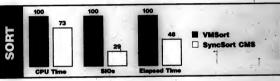
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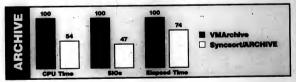
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go-betweens for business



matchmaker.

Top IS executives must take a lead in forging partnerships the business unit managers, d speakers and attendees at a Computerworld Perspectes 1969 conference here last



Du Post's Mahler: Ownerskip is key ew York Life Insurance Co.

"You have to be proactive, do anything you can to get folks to-gether. You have to be surreptiious about it sometimes."
Pettibone gave a broad over-new of New York Life's IS strat-

view of New York Life's IS strategy, but what drew the most questions from attendees was the insurance firm's Business Analyst Program (CW. Sept. 12, 1988). The program nends ac-nior-level IS managers to work in various business units, report-ing to the business units, report-ing to the business unit head but retaining atrong functional ties to central corporate IS.

to central corporate IS.

"The business analyst is a senior person, not a liaison," Petti-bone said. "It's someone who's had a few arrows in the back."

hed a few arrows in the back."

A similar program exists at The Quaker Oats Co. in Chicago, said former Vice-President of 18 Roo Bressinshi, who maid inter work that he will be leaving the firm [see story page 119] decided several years ago that end-user application could mark the program of the basicess units. Using personal computer applications to get at corporate sakes data, for example, brand managers track their brand managers track their sharts more effectively.

We had to push out applica-ownership," Bracainski

The first rule of thumb, said Coca-Cola Foods' Director of Applied Information Technology Cheryl Currid, is understanding where information services stand within your company. "In

some firms, information services are still dead last" on the list of priorities, she said.

Other tips from Currid included the following:

Transiste technical talk into business talk so line managers and the chief executive officer

and the caser executive onser-understand your plans in plain English.

Get users to help design their systems — don't let the systems department be a vacuum.

• Form a steering comm functional line managers. They will work hard to sell the CEO on

1 Bely community of the systems that was a few or vice-president of IS at where systems are going and what they care of the community of the c

pany's vision.

The successful implementation of expert systems is impossible without business user involvement at every step, said Ed Mahler, program manager for artificial intelligence at Du Poet Co. "The key to success is ownershi

ownership and ownership, of the systems by the users, be When systems and other busi-ness areas do not work together, problems can

arise. New York Life's Howard F. Maroney, corpo-

tion systems and services, said that group insurance claims processi center in Irela to realize substantial cost savings. But the loca-

tion of the building was re-lected by the business people, who never con-sulted the sys-

is in a rural locapacity, for exam-ple. "Most of the problems we had The request from notice management, as a Serve Zammann, considing storage of the Serve Zammann, considing storage of the Serve Zammann, considing the best rick.

The of Anthreas Cammann is the "Fig." and Chamerman, who count do not be design and imbulation of application systems, a serve and a server and the server and

IS execs now becoming Rethink before automating

BY JEAN S. BOZMAN and ALAN J. RYAN NEW YORK - The info

systems organization of 1989 may be automating the corpo-rate organisation of 1949 — a time when U.S. businesses, in stark contrast to today's corporate climate needed to do little more than merely manage their

That is the thesis of Michael That is the thesis or manner. Hammer, president of Hammer and Co., a Cambridge, Mass.and Co., a Camorioge, Mass-based IS consulting firm. "We are embedding in allicon many organizational structures that organizational structures that are 40 years old," said Hammer. a keynote speaker at the Com-putermorld Perspectives 1989 conference here last week. "Those structures are absolute-ly dreadful and lousy for business in 1989."

Hammer was one of several speakers who called on IS executives to help their companies rethink their businesses to take full advantage of the strategic bene-fits of information technology. Hartford, Conn.-based Northeast Utilities, for example, engaged in "some nonutility thinkto implement joint customer billing with the telephone company, according to North-east Vice-President Tod O. Dix-

Automation of existing divisignal functions - the tradition al accounting, purchasing, ac-counts payable and receivable is not enough to make U.S. firms strong competitors of foreign in-

A wide view

hief information officers will need to look be-yond their data centers if they hope to gain more respect from senior management, said Steve Zimmerman, consulting managing direc-

Hammer stressed the benefits of IS

The organization itself m The organization itself must change — even as automation takes over repetitive tasks with-in it. Ironically, perhaps, the business of redesigning the hu-man element in the business can lead to equal gains, Hammer

Leading-edge technologies such as satellites, interactive such as satellates, interactive ideo and expert systems are "paradigm-busters." These in-novations can belp bridge orga-nizational barriers that prevent different functions from sharing relevant information, Hammer said. "We must redefine the na-ture of the work to take advantage of the systems technology.

> id example came A real-world exam executive vice-president of Dow

& Co., which purchased a massively paral-lel Thinking Ma-chines, Inc. Con-nection Machine to search its huge

"It solved a problem, but more important-ly, it changed the mind-net of our

the example of Ford Motor Co. learned bundreds of ac-

hundreds of ac-counts payable employees while its Japanese trad-ing partner, Max-ds, had only a handful. By allow-

Marda was better able to leverage its invest ment in computers that cords, Hammer said. the same approach, re-ducing the number of people required to han-

and cutting costs.

That theme was echoed by Stephen K. Smith, a vice-president and computer industry analyst at Paine Web-ber, Inc. in New York. Productivity gains in the Far East, be said, stem as much from replacement of capital equipment in factories and lower wage rates as

they do from automa-"There is no 30-year-old hardware" in Asian fac-tories, Smith said. "That's what allows them to leapfrog us with

new technology."

Also challenging U.S. businesses today in the way information must be handled in relation

too must be handled in restront to employees, according to Sho-shana Zuboff, associate profes-sor of organizational behavior at Harvard Business School and su-ther of In the Age of the Smart Machine.

Information technology "represents a radical change in munifacturing history." Zuboff said.
"Every other business change
that has occurred in the past has

been designed to move complex-ity out of the work environ-mest," and to move important information into the hands of "Now, we are giving informa-tion back to the front line" and challenging the old corporate logic in the process, she said.

Learning is the new form of labor and there needs to be a shift to-

and there needs to be a shift toward much greater intellectual stills in workers, she added.

Zubod' said that atthough managers may possibly feel threatened at the prospect of giving up their information to the lower levels, workers want to have more and more knowledge. Managers will have to learn to play the role of educations helping to develop a distinctions helping to develop a distinction of the control of the contro tors, helping to develop skills for the front-line workers and helping to create an environment in

pressed.
"This is the first time in histo "This is the first time in history when the development of technology and the development of human shills are on the same path." Zubolf said.

To date, however, the required education is worfully short in most or granisations, according to Richard Bell, a recruiter at Arthur Young Management Consulting Group in humans.

TEAMS, BOTHAN

Sikes expected to take FCC chairmanship

BY MITCH BETTS

WASHINGTON, D.C. - President B is expected to officially nominate Alfred C. Sikes "any day now" to become chair-man of the Fed-

eral Communiuid. He will be the third nomina-

de to the fiveel to the lo-

user group welcomes the forthcoming nomination, although Sikes and the ICA have not always agreed on particular it



same time, try to repair the commission's poor relations with Congress.

At the NTIA, Sikes supported the price caps plan for regulating common-

U.S. vendors to fund chip venture

BY JEAN'S, BOZMAN SANTA CLARA, Calif. - Reacting to the

dramatic Japanese lead as dynamic ran dom-access memory (DRAM) chip suppli ers, seven U.S. computer vendors agri last week to fund a domestic start-up t produces 4M-bit DRAMs.

produces 4M-bit DRAMS.

Semiconductor Industry. Association
(SIA) estimates place the Japanese marlet share at more than 80% of all DRAMs
made worldwide. The U.S. has less than

Now in the planning phase, the new micoaductor venture will be called U.S. lemories, Inc. Plans call for the firm to anufacture DRAM chips under license

from BBM.

The seven founders — all members of the SIA board — have agreed to put up \$85,000 each to fuid a business plan. The plan will be reviewed in several months by the 14-member board, which began a DRAM study group in March.

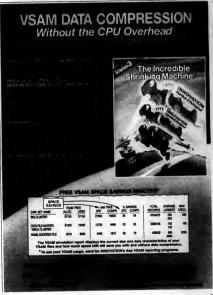
The seren vendors who contributed start-up money are Advanced Micro Devices Inc., Digital Engineent Corp., Hersett-Packard Co., IBM, Intel Corp., LSI

fett-Packard Co., IBM, Intel Corp., LSA Logic Corp. and National Semiconductor Corp. More companies are expected to join the funding effort in coming weeks. Sanford L. Kane, former vice-presi-dent of IBM's General Technology Divi-

ries president and chief executive efficer. SIA spokemen said the group decided to use IBM's submicron technology to pro-duce the high-density DRAMs because it was available for volume production. However, before the IBM technology can be used, a technology-transfer agree-ment between IBM and U.S. Memories result be hammered out, an SIA monkers. ust be hammered out, an SIA sp

oman said.

George Bodway, director of system
ogram planning at HP, said that the
espany views the compact as a longrm investment rather than an attempt



NEWS SHORTS

NAS losses court challenge
A Georgia judge last week denied National Advanced Systems
hid to her the installation of an IBM mainframe at the State of
Georgia Department of Administrative Services. NAS had
charged that a crucial benchmark test was not conducted in

itsu offers MVS/XA look-alike

An operating system designed to be compatible with IBM MVS/XA was amounced last week by Fujitsu Ltd. But IBMor the systems manufacturer Arndah Corp, said the an-cement is unlikely to pit Fujitsu against Andahl, of which is owns 46%, because Fujitsu does not sell its own main-sin the US.

vant-Garde finds buyer WORTH-GORING TENERS BUTYOF

altivendor network management pioneer Avant-Garde
moning, Inc. has agreed to be acquired by Boole & Babge, Inc. The pact calls for Avant-Garde to file for Chapter 11
altraptcy protection and for Boole & Babbage to sesume
no of Avant-Garde's liabilities and pay 84 million in cash.

FAA computer technicians get boost Abox 2,100 sit-triffs controllers and computer technicians in four critism are eligible for py increases of the 100 Ms as a lo-centive to keep them at those locations. The five-wave dama-tion of the control of the control of the control of the ministration tengo statis in the New York. Chicago. Los Angeles and San Francisco areas, where high living costs or other factors have made them unstructive work locations.

Loptop bon gets kibosh
U.S. Transportien Secretary Sensels K. Stinner last week decided against benning laptop comparter from airliners (CW,
May 8). Instead, he ordered "intensive screening" of solcomputers before allowing them on board U.S. flights originating in Europe and the Michle East. The order responds to reports that terrorishs have hidden benish in electronic devices.

Taiwan firms to make Sun clones Inviting competition in the dealtop reduce instruction set compating business, San Microsystems, Inc. monocost that compating business, San Microsystems, Inc. monocost that Co., will make wentstations based on Sun's Scalable Processor Architecture. Promising to build more than 50,000 units per month in 1990, the companies will bring computers into the U.S. through their own distribution channels.

BM buys into image firms

BMA scopiered minority equity interests last week in applica-tions notivere developer Image Business Systems Corp. and I/NET, Inc., a construct research and development firm. IBM invested \$6 million in IBS and \$4.3 million in I/NET.

Software firms boost CSP

Peat Marwick sells CASE tools

ting to transform itself into still-service CASS vendor, XA tens Corp. last week sequired the PMAT computer-sided ware engineering tools from RPMG Pest Marwick, which sequires "less than 10%" share of XA Systems and will of-nessiting services related to PMAT.

Prime FROM PACE 1

aftermath of a meeting between executives of and attorneys for the respective companies. Nei-ther Prime nor MAI was available for comment, According to analysts, how

ever, the most attractive part of the offer might well be Whit-ney's avowed determination to maintain Prime as a going con-

cern in its current location. We are interested only in building on Prime," said Whit-ney partner Don E. Ackerman. "We are not, I repeat, not inter-

ested in breaking up Prime and selling off its parts. setting off its parts."

Industry observers have been convinced from the beginning that MAI, denials notwithstanding, would plan to do precisely that if instructure.

IRM FROM PAGE 1

The question is, will it be out on the market on time when we need it?" said Dick Le Fave, semor vice-president of operations and technical support at Boston Safe Deposit and Trust Co. in Boston

IBM officials downplayed speculation that it announced the product in an attempt to



freeze the high-end PC market and leapfrog Intel 80386-based PC market leader Compaq Com-

puter Corp. with a vaporous product.
"We're telling our customers
who need 486 speed and power
now that the Model 70 A-21 is
the platform we will upgrade
first," said William McCracken,
IBM vice-president of channel

"Intel has an excellent track record, and we fully expect them to meet their scheduled ship-ments," McCracken said. IBM's promises do not give

som a promises do not give users a chance to see specifically what the product will do for them, said Ernie Pages, a PC consultant at Ryder Systems, Inc. in Miami.

"The performance enhance-ments of the 1486 sound very appealing, as we need a server to support extended apreadsheets and Windows applications," Pages said. "But I don't know

customer base and its employees as major assets, self that no decisions have been reached regarding the management team. However, said Charles Foundyler, president of Darstein House, and the market research firm in Cambridge, Mass., "It seems clear between the lines of (Whitney's) amountement that they are expecting to beep Prime managements of the prime management of the prime of the contract o

ment in place."

According to industry observers. Whitney has the credentials ers, Whitney has the credentials to back up its claim that it will run Prime rather than sell it. The 43-year-old venture capital firm has been heavily invested in computer technology for many

years.

If the company's proposed white-knight rescue of Prime succeeds, it will not be Whitney first. In 1967, Whitney and fellow venture capital players Weish, Carson, Anderson & Stowe created a subsidiary to Ackerman, who cited Prime's what it will do for us until it is what it will do for us until it is tested. And I can't do that until it is finally available." However, J. R. Garrett, man-ager of technological services at Fina Oijand Chemical Co. In Pol-las, said that an upgraded Model Oil A-21 would offer greater po-tential running OS/2 and as an engineering platform than as an office machine.

They tried "We charged \$4,000, too, to upgrade the 16-MHz too 25-MHz, and we sold much fewer than satisfacted." It is sufficient to the sufficient of the su

concerned about the upgrade concept itself. "I tried to up-grade an AT from a 286 to a 386,

grade in A1 from a 280 to a 380, and I received no performance benefits. I don't know what it will give me with these processors and a Micro Channel bus."

The IBM spokesman said benchmarks abowed that the

Model 70 A-21 outperformed Compaq's 386/33 by 40% in general-office applications.

CCORDING TO analysts. however, the most attractive part of the offer might well be Whitney's avowed determination to maintain Prime as a going concern in its current location.

snatch Decision Industries Corp., now Decision Data, Inc., from hostile bidder Econocom

from bostile bidder Econocom Internstional N.V.

If DR — the initials stand for the names of two Whitney part-ners — edges out MAI, Foun-dyler said, "the bad news is that Prime ends up with debt." The good news, he said, is that Prim ends up alive.

AS/400 tape drive add-on boosts speed

BY ROSEMARY HAMILTON

gineering parties of the first IBM last week made good on one IBM met week made good on one of its promises to improve its Ap-plication System/400 high-end tape drive, which has reportedly been a big disappointment to most users. plug-in replacement and upgraded a Mod-el 70 A-21 at the product's introduc-tion. This on-site tion. This on-site CPU replacement is possible because of the design of the Model 70 A-21,

most users.

The company said it planned to make available sometime in the third quarter an add-on device designed to boost the 2440's speed to 235K byte/sec. when operating at 1,600 byte/in. and 918K byte/sec. at 6.250

Currently, the 2440 has data transfer rates of 120K byte/ sec. and 469K byte/sec.
The add-on will cost users

The add-on will cost users \$5.995. With the enhancement, the 2440 will surpass the data transfer rates of the 3422, which was originally intended to bring relief to 2440 users. Blue Originally announced the 2440 users and suith state an interface to the faster 3422 would be available in the fourth quarter of 1989. IBM said it still intende to make that original years.

The 3422 has data transfer

The 3422 has data transfer rates of 200K byte/sec. and 780K byte/sec.
All along, users have been saying that both the 2440 and 3422 were not fast enough to perform efficient tape hackups.
The performance boost was one of two tape drive promises IBM made earlier this month. The company also said it plans to

deliver a new tape drive in con-junction with a third-narty

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IBM gives users nudge with CICS/ESA

BY STANLEY GIBSO

IBM added another link to its chain of inducements to move customers to its flagship MVS/ESA operating system last week when it amounced a version of its CCS teleprocessing monitor that takes advantage of Enterprise Systems Architecture capabilities. Although not scheduled to be out until June 1990, CIS/ESA Version 3 Release

which includes more functionality than other CICS versions, will not run on any operating system other than MVS/ESA. However, CICS/MVS Version 2, the new version's producessor, will run under ESA. IBM recommended that users of CICS/IOS/VS move to that before going to Version 3. Also, IBM brought some Systems Application Architecture (SAA)-re-

tems Application Architecture (SAA)-related features to CICS/ESA and promised more. However, it held back from anoisting CICS/ESA as fully SAA-compliant. "CICS/ESA Version 3 is most definitetures described and the second second

Hursley, England, "We need to rely on EAA being there. We are specifically calling on functions available only in ESA," be said, explaining why this version of CICS will not run on other operating systems, including MVS/XA.

Some highlights of the CICS/ESA amnouncement included the following:

- Support for MN/S/ESA's Database Manager: Data Base Control, which enables customers to separate a database and its management from CICS and put it in its own MN/S/ESA address space.

- Support for Data Entry Data Bases, also known as Fast Path, which provides large. high-availability databases.

CICS/ESA's discontinued support for CICS macro-level applications.

or Withdrawal from the market of CICS/
OSV/N Version 1, which IBM had announced would not be enhanced fur ther.
A major enhancement was to put CICSA and MS Good in separate address spaces
and MS Good in separate address spaces
storage relief by helping keep code below
the 16M-byte level. Under DB2, CICS
code and DB2 are already separate.

code and Diff are already separate. This sectors should suppower reliability. This sectors should suppower reliability. The sectors should suppower reliability. The sectors should be reliable to the coordinate of the control of the

promises is a plus. "Anything that brings us closer to 24-hour operations, we are in favor of." Barnes said.

Another user, similarly awaiting ESA installation, welcomed the announcement calmly. "At the present time, we don't have a requirement in that area," said Jack Mellon, director of systems development at Ryder Truck Rental in Miami.

CICS sneaks a few inches closer to SAA

BY STANLEY GIBSON

IBM said last week that CICS/ESA Version 3 Release 1 will have more Systems Application Architecture (SAA)-related

Appearation Architecture (SAA)-reactor
features than any other CIGS version.

"The highest level of SAA support will
be under CIS/ESA," mid Geoff Sharman, an IBM development technical pianmer in Harshy, England. Other versions
of CIGS, including CIGS/VSE, CIGS/OS/E
and CIGS/VM, will gain no more SAA fortures than they already have, IBM said.

The ennancements announced not week do not change CICS classification as a "participating" SAA environment, which is IBM's euphemism for products that are not part of SAA but are granted some SAA stributes, including languages, protocols and interfaces. Another participating product is IMS.

Support for SAA languages Fortran

some SAA attributes, including languages, protocols and interfaces. Another participating product is IMS. support for SAA languages Fortran and Reax will not be offered under CICS/ ESA unless users demand it. Otherwise, CICS/ESA will support all other SAA requirements, Sharman said.

quirements, Soarman sub.

The announcement said that future SAA enhancements will include support for the C language and the Common Programming tentrace-Communications. IBM said it has no plants to add these or other SAA features to other GCS products, inching GCKS/OS/2 and GCKS/VSE, but strong customer demand could be considered the control of the

VSE, but strong cumonous values that posture, Sharman said.
For CICS to be fully SAA-compliant, support of all SAA languages would have to be offered, and CICS would have to be offered on the Application System/400.

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Two firms sign on for Tariff 12

t the legal uncertain-nding Tariff 12, but

vice, according to Berge Ayva-Corp. and U.S. filed suit in federal court seeking to overturn the PCC ruling. AT&T filed Tariff 12 Option VI and Option VII June 16 but declined to name the first cus-tomers under each option.

He declined further comment.

The fact that Allied-Signal signed a Tartiff 12 contract is not agned a Tariff 12 contract is not a surprise because the firm has been a loyal customer of AT&T's Software Defined Net-work service for a long time, Ay-vakian nist.

AT&T estimated that the

a minimum monthly char Meanwhile, Prudential Jusur-ance Co. has signed an agree-ment but has not yet submitted what will be the largest Tariff 12 filing to date, said Henry D. Levine, a partner at Morrison & Foerster, a law firm based here.

MCI and U.S. Sprint recently filed suit in the federal appeals

filed suit in the federal appeals court here to overturn the FCC'a decision allowing AT&T to continueoffering Tariff 12. "I don't think [the suit] is a threat to our [Tariff 12] con-tract, but I think it's a terrific strategy to use as a mari tool to try and scare the devil out er of telecommunications at General Electric Co. "My recendation is to do what's think the suit, if not thrown out of court early on, could go on for

of court early on, could go off for several years."

Brian R. Moir and James S. Blassak, Washington attorneys who work with large users, said most Tariff 12 customers have provisions built into their con-tracts to protect them from any legal or regulatory decisions that channet he searche. ange the service. The lawsuits do create som

uncertainty, but user reaction will depend on how much risk particular users are willing to tolerate, Blaszak said. He said tolerate, Biaszak said. He said the court appeals are long-shot bids because the FCC order is sound. Furthermore, the FCC technically rejected the original Tariff 12 filings and forced revisions. In its April ruting, the FCC ordered AT&T to revise the filings to ensure general sity, but the FCC also alad AT&T to continue offering the service to existit tomers [CW, April 17].

Don Elardo, counsel for MCI, said the FCC ignored several issues, such as the legslity of AT&T offering special discounts to Tariff 12 customers but not to

AT&T ex

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Oracle Version 6.0 covers the distributed data 'bases'

BY JEAN S. BOZMAN

VEW YORK - Oracle Corp.

at by Oracle to become the first offer universal, transparent query lacidies. But it comes just est his market is heating up. Microsoft Corp. in Bellevue, Wash, has already teamed with Ashton-Tate Corp. in Torrance, Calif., to provide an SQL Server product for distributed PCa. IBM in reportedly expected to ship

ing of the PC Server a of "Outlook on Professional Com in Santa Clara, Calif. "They und that end users need to access the corporate data, no matter where it may b

However, Sevbold said, there was little new technology emb acle PC Server announce the first PC Server offerings are built on Oracle Version 6.0, including the Transaction Processing Option that is alread

Oracle's PC Database servers for OS; Z ulsis 386, Basyan Systems, Inc.'s Vir-tual Networking Software (Vines) and Orvell, Inc.'s Netware 386 operating sys-tems will be shipped in stages, starting with the Vines version in Angart. The OS; 2 and Unix 386 versions will be shipped neath and the Netware 386 servers will sale fall, while Netware 386 servers will

ship in 1990.

Prices for the server software will range from \$2,500 to \$4,000.
In a related development last week, Oracle announced it would port Version and by Neubel Corp., in Beaverton, Ore. Neube developed the first supercomputer architecture supported by Oracle.

Major vendors eveball X.400 API with some caution

BY ELISABETH HORWITT

SANTA CLARA, Calif. - A group of 21 ore last week proposed a standard cation programming interface (API) ned to bring vendor independence to preways that enable local-area netk systems to exchange message X.400-compliant systems. However, the absence of several major vendors raised the issue of whether the group's API will in fact become the standard, industry

urces said.
The X.400 API Association pub ecifications last week for inter electronic mail packages with X.400
LAN gateways (CW, June S). It plans next
to provide a similar link for other types of

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sion that can double throughout. And Haves Sync for built-in synchronous communications without the added expense of a synchronous adapter card.

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tore will be a unusual charge of \$50 for either an X.25 or V42 upgrade on products purchased before October 1. 1988, Products pro allow Consher 1. 1988, will include either utundand as they become available. For details call Harve Contoner Service. 404 441 W.

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the best.



Hand impairment plagues industry

BY MITCH BETTS

ers such as reservation agents telephone operators and insur-ance claim workers, pounding the keyboard all day can lead to

The problem is carpal-tunnel syndrome and other painful dis-orders in the fingers, hands and wrists caused by repetitive key-strokes. When tendons become inflamed and swelled, they put pressure on the nerves in the wrist, resulting in shooting point, numbress and, eventually,

paired use of the hand. Cumulative trauma disorders way be "the industrial disease of the information age," U.S. Rep. Tom Lantos (D-Calif.) said at a lune 6 congressional hearing on

Lantos said repetitive motion sorders are the leading cause of occupational illnesses - af fecting workers in jobs as di verse as poultry processing and newspaper editing — and now count for one-third of all work-

For managers, these repetitive motion injuries — 'also known as cumulative trauma disorders - can be a vexing prob lem with no easy cure as well as a costly introduction to the field of

At the Denver offices of US West. Inc., the regional phone company was forced by govern ment and union complaints to unend \$2 million on European ergonomic chairs, adjustable VDT workstations, soft-touch keyboards and training videos. The office renovation, fin-

ished in early 1988, was trig-

gegeo by an outbreak or repetive motion syndrome among 189 of 500 telephone operators at the Denver offices. Many had unsuccessful operations in an attempt to relieve their pain, 10 employees were fired

Workers at risk

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cause their crippled hands and arms could not keep up the pace of completing a directory-assistance call every 24 seconds. Since the offices were rem

eled, the number of repetitive motion injuries has dropped, but the problem has not disap-peared. Debbie Thomas, spokes-person for US West in Englewood, Colo., said 46 operat have been diagnosed with repeti-tive motion syndrome since the renovation, including some peo-"We don't know why . . . and it's extremely frustrating," she

committee has been formed to improve communication and search for answers such as changing the job design or adding rest breaks, Thomas said. Marvin Dainoff, director of the Center for Ergonomic Re-

Oxford, Ohio, said medical ex-perts disagree about the role of arress in these injuries, but he orking for a prolonged period an awkward position leads to

'One factor [for VDT users] is how much you change your posture and what mix of tasks you have," be said, adding that redesigning jobs is as important designing workstations.

> editors at more than a dozen U.S. newsonpers have been particu-larly hard-hit, said David Eisen, spokesman for

away from

The Communications Work ers of America (CWA), which ers or America (CWA), which represents nearly 475,000 VDT workers, blames the problem on corporate managers who fail to give VDT users comfortable workplaces and periodic work aku to relieve stress.

"As is frequently the case in the modern workplace, the man-ofacturers of VDT equipment and the companies that use them have focused on designing a device that will increase wor vice that will increase worker output but have, neglected the comfort and well-being of the wage-earner who is essential to operate it," testified CWA Presi-dent Morton Bahr.

Bahr noted that US West has spent roughly \$5 million so far on ergonomic offices and train ing, medical treatments for al

Steps not taken

a labor, government and industry continue to debate causes and responsibilities for rejective motion isp-ries, Lawrence J. Fine of the National Institute for Competional Safety and Realth testified recensily, that the problem is flindy to increase. He offered two for factors for that view. First, there is a great increase in

The total the problem is largely to accesses. He defined two problems are considered to the problems and the problems are considered to the problems. The considered to the problems are considered to the problems. As the problems are considered to the problems are considered to the problems. The considered to the bestime control and the problems are considered to the control considered to the control con

Alleged calling-card thief charged in first-ever case

BY MICHAEL ALEXANDER CHICAGO - Federal law enforcement officials last week charged the reputed ring leader

of a nationwide network of more than 150 computer backers with 17 counts of violating federal computer, access device and According to authorities at

the U.S. attorney's office and the Chicago division of the Secret Service, Leslie Lynne Doucette, 35, was indicted for stealing tele-35, was indicted for stealing tele-phone and computer services from companies and illegally pos-sessing, trafficking and market-ing commercial credit-card and telephone calling-card numbers, which are so-called access deof Kyrie, is also accused of uni corporate and government voice-mail computers and pri-vate branch exchange (PBX)

puter hacker-has been errested and indicted on charges of using voice-small computer and PBX systems to violate federal stat-utes, said Wilham Cook, assis-tant U.S. attorney for the North-ern District of Illinois [CW, June

The indictment alleged th such companies as American Express Co., AT&T, MCI Commo nications Corp. and U.S. Sp nications Co. lost stantially more than \$1.6 m lion," as a result of fraud allege y carried out by Doucette and her fellow hackers. It also al-leged that Doucette directed other backers to obtain stolen credit-card numbers that al used to obtain Western Unio money orders payable to her in

der assumed names.

The case is expected to go to trial in about two months, Cooksaid. If convicted of all charges, Doucette will face a maximum sentence of 89 years in prison, \$69,000 fine and will be ordere to pay \$1.6 million in restitution

Excelan, Novell find balance of labor BY ELISABETH HORWITT

Shareholders put their stamp of approval on the Novell, Inc./Excelan, Inc. union last week, and the officially merged companies revealed plans for synergizing their product and marketing

From Novell's standpoint we need to accelerate techno logical penetration in markets we are not strong enough in," said Novell President and Chief Executive Officer Ray Noords. Novell, for instance, had just begun moving into Open Sys-tems Interconnect and Trans-mission Control Protocol/Interiet Protocol (TCP/IP) as well as

Unix and Digital Equipment Corp. VAX/VMS networks, all

lan, according to Kanwal Rekhi, former president and CEO of Excelan and now executive vicepresident of Novell

Prior to the merger, the two companies had jointly developed an Apple Computer, Inc. Macin-tosh version of Novell's Netre, Noorda said.

Other joint projects now in the works include the following: • Netware 386 versions of TCP/IP and Sun Microsystems. Inc. Network File System, which will become standard on all Netware releases beyond the 3.0 version, Rekhi said. • OSI support for Netware at an

undisclosed time.

• Portable Netware for VAX/

clude an enhanced version of Ex-celan's protocol analyzer for local-area networks, the Lana-Noords emphasized that the erger will concentrate on LAN

software, not hardware, alsigh the partners will make sure that their products run on all of the major LAN hardware systems, including Token-Ring Excelan, which came close to nerging with T1 switch vendor

letwork Equipment Technol-cies. Inc. last summer, acceptthere was a more obvious and

Others talk about database speed.



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And stay tuned for a fast response.



EDITORIAL

Heroes

That has such people in '!!

OR MOST OF us, the work day revolves around meeting budgets, fighting deadlines and oleasing the boss. Technology is a tool that cuts costs and speeds comnications. When was the last time we considered whether it makes the world a better place to live

Last week, Computerworld and the Smithsonian Institution recognized 11 individuals and companies that have taken technology beyond the scope of mere automation. Some are famous: many are not. All have found a use for technology

many are not. An nave round a use for technology that betters the human condition. Consider LC Technologies, Inc. Its Eyegaze system bounces a beam of light off a visually im-paired person's retina to enable him to type, turn

on lights and dial the telephone simply by looking at a screen Consider the National Research Center for the Identification of Missing Children. Its comuters artificially "age" photos of missing chil-

dren to show how they look years later, bringing a happy ending to many families' anguish. Consider Uplinger Enterprises. Technology enabled the Live Aid concert it produced to be seen by two billion people. It raised more than \$100 million to ease the suffering of an entire

The motivations that spurred these and the other award nominees were very different. Some saw a business opportunity that, coincidentally, bettered people's lives. Others saw a chance to achieve a broader human goal with technology serving as a tool. But they all shared one thing: The things they did would not have been possible without the computer.

This is rather remarkable when you consider that only a few years ago information technology was an inhibitor of innovation. Ideas were restricted by the need to implement them on expensive, computer room-bound mainframes or minicomputers. What the physical problems could not shoot down, cost concerns usually did.

In the 1980s information technology has become the great enabler. Miniaturization has brought computing into the home, where communications makes it possible to connect to the outside world in real time. Portable video cameras send signals directly to a satellite, where they can be beamed around the world. We have only begun to exploit the potential of portable computers and embedded microprocessors. The question, "How do we make do with what we've got?" has given way to, "What new uses can we velop for this technology?"

Last week's awards were the result of what was called "The Search for New Heroes." We think we found some. We applaud the 160 nominees, the 26 distinguished judges and the 40 chairmen who gave their time and resources to this project. We look forward to finding the many more heroes who are still out there waiting to be



LETTERS TO THE EDITOR

Pros. cons to independent brokering I question the direction given to

ald-be consultants in your ar-"Selecting a winning broker" ICW, May 291. It is important to recognize that compliance to rule 1706 and other Internal Revenue Service rulings is a must, because it is the law. Undue advantage for a broker's business is often directly obtained by the use of indepen dents who take the work without knowing they are working dishonestly

The unknowing client may also become affected by this dishonesty in that he may ultimately become responsible for the infits and other worse after the fact

People seeking autonomy, career growth and personal challenge should either work for a true professional services firm or go out and start a true busi ness. The historical "bad name attributed to MIS consultants and contractors has been in large part propagated by brokers who have little or no stake in a quality product, the success of a project or their clients' reputation

Let the buyer and the talented professional beware. Working with quality professional organirations is not as difficult as your story suggested. On the con-trary, such organizations provide unparalled career growth, solid compensation and limited amounts of personal and corporate risk

Roger Akers Principal Prodata, Inc. Sacramento, Calif.

confirmed, in black and white, Informatics Inte estions I have verbalized to

over the last 10 years. It was nersonally rewarding to see these same opinions published in your article.

In reference to the final paragraph of this article, which m tioned a list of consulting firms willing to use independent con-sultants, I immediately contact-ed the Independent Computer Consultants Association (ICCA). Because Abator makes signifi cant use of independent talent, the concept was of great inter-est. Unfortunately, the ICCA in-

dicated no active or planned compilation of vendors willing to work with independents. Perhaps you could gain additional in-formation from the ICCA regarding this valuable effort.

Joanne E. Petern Abator Information Services

want to compliment you on the excellent, informative artic Selecting a winning bröker However, there is a major misconception in the article regarding the compilation of a list of ers or agents.

The Independent Computer Consultants Association (ICCA) does not in any way comp maintain or distribute such lists. Many, if not all, of the local ICCA chapters publish directories of their members who are indepen-

Any individual, compa organization may contact a local chapter of the ICCA for information on obtaining copies of these

> Robert B. Slobins Presid Fort Lee, N.J.

Real maintenance

The letter that decried the practice of maintenance fees charged for software products [CW. April 171 compares software mai sance and a car's warranty. Unfortunately, software developers

are all too human and defects are present in purchased software ut error correction is only part When you buy a car and then change your driving habits, do you expect the car manufacturer to retrofit four-wheel drive and

r-duty shocks into the unbicle? No, but you do expect the software manufacturer to up-grade his product when you change operating system releases on your computer.

If you drive your vehicle into a

ike, do you blame the manufacturer for failing to make the en-gine watertight? No. but you do gine watertight? No. but you or fault the software producer for failure to edit against all possible s innut Software is not the only thing on the market that contains de

fects at the time of purchase my vacuum cleaner was recalled two years ago. Unlike cars, or vacuum cleaners, software is an evolving thing that is constantly being improved over time, and software maintenance dollars are the engine that drives this

David W. Dick Software Developer Davis, Thomas & Associates Minneatolis

uterworld unicomes comits from its readers. Lett may be edited for brevity and clarity and should be address to Bill Laberis, Editor, Comp erworld, P.O. Box 9171, 375 Co. chituate Road, Framingham Mars 01701

Tracking technology: Who performs the task?

IOHN KIRKLEY For today's har-ried IS manag-

er, keeping up cal change is becoming an in-creasingly dif-Tracking new product introactions and major enhancents is tough enough, but the IS manager's

nework does not stop there. He must also keep abreast of the infighting and political maneuinfighting and political maneu-vering engaged in by vendors, standards bodies and govern-ment agencies that often have more of an impact on technol-ogy a future direction than a revtionary piece of hardware or

One way businesses have cho-sen to deal with this information overload is to set up in-house technology-assessment groups The primary role of these groups is to intelligently analyze mas-sive amounts of available information, perceptively sniff the winds of change and make rec-ommendations as to which techlogical track the company

viously, this is a key function. Today, incorrect techno-logical recommendations that are hased on had information or inaccurate judgments can be di-

strous. A survey of 38 Fortune 1,000 companies conducted last year by Forrester Research, a Cambridge, Mass., consulting firm, found that nearly halfaf the companies contacted had set up intechnology-asse oups that functioned indepen-ntly from the MIS and tele-

First Impression At first glance, establishing a

separate group seems to have several distinct advantages.

An independent group theo-An independent group theoretically will not have a vested interest in a particular vendor or technology. The group's judgments as to what technological directions the company should directions the company should take will be based on what is good for the company, not what is most convenient for IS.

is most convenient for IS.

Furthermore, many IS managers are just too overloaded to
do a therough job of keeping
track of what is happening. Most
have only enough time to skim a
few trade journals and attend
one or two conferences a year,
the rest of their working divisa
are filled with "firefighting" and

emingly endless meetings.

An independent organization, hose only charge is to assess

the technology, will obviously do a more thorough job.

There is also another inescapable fact of corporate life; politi-cal infighting. If the IS depart-ment has the technology-

essment charter, even the assessment charter, even the most impartial IS manager will be hard-pressed not to make rec-ommendations that would ensure the continuity of his department and his job. Telecom managers cannot be expected to roll over and play dead. Turf wars are inevitable.

So an independent technology-assessment group is the way to go, . . right? Wrong. Here's a scenario proposed by Larry Woods, the director of research at John Deere Informa-

"The technology-assessment group gets fixated on the won-ders of new laptop technology and passes the information on to a senior vice-president," Wood "The senior vice-president is knocked out by the possibili-ties offered by a 40M-byte, fouround Toshiba running Unix, otus and Doase. He tells the ent about it over lunch,

president about it over the new hardware to all the field sites. The IS manager finally learns about the plan at a point where his objections would make him ear to be a myopic reactionappear to be a myopic reaction-tary. The hiptop computers are purchased and issued, and before long, the IS manager is getting calls from field managers at 100 different sites who want to hook into the mainframe to update massive files and swap data. The

Unless the IS manager has a ned bias for or against a particu-r vendor (usually IBM), the as-assment of information technol-

There will always be new and seductive technology on the market. The real issue is not what's new and hot. Rather, it is how to manage the new technol-ogy, and how to make it work within the strategic directions set for the business. The IS man-ager should be the most qualified individual in the company to so

seas the impact of new systems on the existing structure. He should also be able to assess how well the technology fits the orgawell the technology fits the orga-nization's long-range plans.
When it comes to technology, IS managers will do well to beed one of the dictums set forth by Jack Welch, chief executive offi-cer at General Electric: "Control

Trapping those computer gaps

IOWN BARNES I've heard a lot in the last two years about the "software gap."

The gap is ben machine Dramatic improvements in hard-ware have not been matched or taken advantage of by advances in software. But that is only the conspicuous gap. There are at least four other gaps in the in-

The software design gas Programmers can turn out a pro-

gram quickly from a good speciation. However, ecification writers and systems analysts

can't design fast enough to keep pro-grammers fully occu-pied. One effect of this that inadequately signed products move through the cy-cle too fast; hence there are a number of

• The documenta-tion gap. New programs are coming into the marketplace much faster than good manuals and tutorials can he written for them. A majority of new prod

inadequate for the user's purposes. The most obvious example is that the publishing industry makes money producing competing manuals, and users will pay \$25 or more for books with information that was supposedly included in the software pack-

 The support gap. Even when the program does come out with decent directions on how to use it, it's very likely to rot on the shelves because its potential buyers — who are often not the suyers — who are often not the potential users — don't know it is there or what it is good for. Or the salespeople haven't been told enough to know how to in-form those buyers.

 The concept-communica-tion gap. The introduction of truly innovative software into any shop changes the entire op-eration of the business, yet it is such change that is seldom planned for and almost never exned to the people who will be

just make it go faster; it changes its nature fundamentally. The spreadsheet is changing calcula-tion far more than the adding machine, slide rule or pocket cal-

figure out what changes will hap nen, or ought to happen, when

processes are computerized — let alone explain or discuss those changes with the people affect-ed? As a result, it is often literally

years before a shop figures out how to really work with new I see a pattern in all this. The

The most com one is trying to co

someone is trying to communi-cate information that he doesn't have. In hierarchies, it's ex-tremely easy for anyone in a po-sition of power to say to a subor-dinate: "Do this." If the subordinate then says,
"Do what, exactly?" the most
agtural response (because it
takes the least effort) is, "Don't her me with details.

ing for you."

At which point the subordi-nate goes off, makes a few guess-es and issues some more vague

a horse designed by a committee. If it had gue and reach sor decisions. The can was undoubtedly nigned by some sta morning after

are unmade or vague, ti of the computer profes particularly software

Fornilling cure
The cure for this, like the cure
for most problems that won't go
away, is simple — and psinful.
People have to demand real,
thoughtful decisions from one

What are we writing a pro-ram to do? What problems will solve, and not solve? How do

if soive, and not notice how so we want a retail salesperson in Dubuque, lows, on his first day on the job, to present this to a customer? What must our users understand before they can use

The days of "when in doubt, samble," are over. Or to be ore precise, if the computer in-castry wants to close its many sea, those days must come to n end.



face, and it is developed much more slowly. Design requires people to talk to each other, so it goes even slower. Docum on and communication are entirely human-to-human activ and virtually take forever.

Simple question Now why should this be? After all, people are far better at inter-preting vague signals than ma-chines are. Furthermore, a lot

more people can write than pro-gram, and for that motter, there

gram, and for that matter, there are many more people who can program than there are people who can design chips. So why do we do so hadly at something we

ould be good at? One obvious answer is: Who

ays we're good at communicat-ng? Given the number of wars, ourt cases and divorces human

ngs produce, maybe it's nilty think we're all that good at

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SYSTEMS & SOFTWARE

SOFT TALK Bohdan Szuprowicz

In search of real Help

There are Help desks and there are Help desks. When they are sutomated by turning them into specialized expert systems, the results can be spectacular suc-cesses or dismal failures. Much depends on the type of deak being made expert and its impact

on the corporation's business. The expert system Help desks we hear about most often represent attempts to automate the various trouble-shooting functions of a computer center. These are designed pri-marily to assist end users in starting up a computer-related task or getting out of some loop

that hangs them up. Such expert system Help desks can take the form of software hot lines, personal computer configurators, system tun ers, network analyzers and le-shooters, dump analyzers or system debuggers. These Help desks represent many critical functions that

most IS staffs must always be prepared to carry out at a moment's notice However, it is highly ques mable whether such Help desks can be considered strate-gic expert system applications. Most are unlikely to noticeably

ANALYSIS

BY ROSEMARY HAMILTON System/36 users now consider ing an Application System/400 should beed the advice of IBM

customers who are by now warweary AS/400 veterans. Put simply, they say: Be careful. Most would recommend a

purchase but would also tell new users to go slowly and not to ex-pect the nontechnical person's system that the AS/400 once seemed to be In other words the image of Alan Alda promoting the AS/AOO in a friendly office environment is one that is hest forgotten.

"My bottom-line reco dation is that the yellow light is on. Proceed with caution," said Jared Whittemore, p. esident of

USER EXPENDITURES IN BILLIONS

'88 Mini 88.2

'88 Mainframe \$10.3 ·

Data View

Software market forecast

ugh 1993, mainframe, mini and micro software markets are pro to see average annual growth of 13%, 16% and 30%, respectively

J&H Software, Inc. in Denver, which uses an AS/400 B10. "Don't expect it to be as smooth

as the System/34-to-36 [conver-Whittemore, who does con-

Word from the AS/400 front: Caution

Whittemore, who does con-sulting and software develop-ment for IBM's midrange plat-form, said his company's migra-tion from a System/36 was far more troublesome than he had

Even IBM indicates that neone with programming owledge is needed. That is knowledge is needed. That is really important," Whittemore said. Even with in-house expertise, though, Whittemore said be thought that "the migration procould be improved upon.

The good news for new users wever, is that IBM has apparently listened to the comple TRM's interest in us has

been beyond what we imagined a year ago," said Ron Cipolla, MIS firector at Kendall Co. in Bos-ton. "They're constantly asking us about what's good and what's bad, and we can actually see what's being done with that in-

IBM used feedback An IBM spokesman said feed-back from customers and third-

erty software developers will incorporated in both IBM support services and future product week's announcements from IBM were "usability enhance-ments" for the AS/400.

In the meantime, the compa-ny is busy cloning the migration assistance program that it currently operates out of Roches Minn. By summer's end. IBM expects to have 12 migration assistance centers set up around the country and staffed

with Rochester people.

Separately, IBM has beefed up its training of business partners, the companies that write applications for the AS/400. A relatively new program called Jumpstart is under way in Roch-

er that will give bus ners more training on the midrange environment.

Of course, some users could say they wished all these additional programs were offered in late 1988 when their AS/400s

were arriving and their head-aches were beginning. What they got instead was help from IRM on a per-problem

"When we brought our code over to operate in System/36

mode on the AS400, it was a nightmare," said Phyllis Bordeaux, data processing manager for the information systems department in Orange Coasty, bad so many problems that we were loading between 10 and 12 PTFs. [Program Temporary Fixes] per day, And aftew use got all that working, we had problems that the processing the processing the

made modifications to the code Once those modifications were

Once those modifications were made, the performance picked up dramatically, she said. Frank Campbell, IS director at Jefferson Regional Medical Center in Pine Blaff, Ark., said be got help early form IBM particularly with software prob-lems. Over time, be said, IBM it and gozene to beaus harve. self seems to have learned more about the AS/400 software and is improving its support, Car hell said.

"In a way, it was a new proj-ect for them, and they had their own bugs to work out;" Camp-bell said, "They're much more responsive now."

Mid-Atlantic Correspondent Robert Moran contributed

to this report

e Mom-and-pap shops stock up on Associated Grocers' IS services. Page 25. c CA's transparency prod-ucts smooth way for relation-al transitions. Page 25. e Big Moddy watchers em-ploy Prime 9958. Page 25.

'88 Micro bas effect the competitiveness of

Continued on base 31

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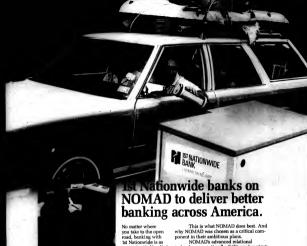
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Small stores use association's IS leverage

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economies of scale to hire staff to develop software and new ser-vices," said Richard Lester, vice-president of information services. "We don't offer infor-mation services to make a profit but to make our members more successful. We aim to keep the cost of services out of the cost of the product."

big and smell
The 550 member stores range in
size from corner markets to superstores. While primarily serving the Pucific Northwest. Associated Grocers just added a new
market in Gunn. Lester said.
"A typical supermarket has
\$2,000 items. If you want to
lenge that on those, you have
longe volumes of data and you.
"and the said of the sa

BY ELLIS BOOKER

ment type of service-mering such as "customer composite," which keeps track of all the items in a given store, their profit mar-gina, their back inventory, how often they sell and whether sales



Sitting on the dock of the bay

CA's transparency tools allow smooth transition

BY STANLEY GIBSON

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IRM

DEC software splashes aerospace market

Offerings tout low cost and ease in designing products

BY STANLEY GIBSON

MAYNARD, Mass. — Some new Digital ment Corp. software products for pace users will aid engineering

serospace users will aid engineering reducts faster and at less cost, according to DEC. Electronic Data Control System (EDCS) III automates tracking, management and control of dopaments, allowing multiple clients to work with multiple energy. DEC said the of the product's capabilities in an automatic notification energy and the energy of the control of the energy of the energy

rent status.

EDCS II was built to run on top of DEC's RDB relational database manage-ment system, which uses SQL. Other RDBMSs are not supported at this time,

CONTINUED FROM PAGE 25

avoid coexistence of two database ma

avoid coexistence of two database man-agement systems. You don't want to pay double licenses," he added. American Olean currently runs DOS/ VSE SP 3.1 under VM on lan IBM 3090 120E. Conforto taid his firm could have moved to IBM's SQL/DS running under VM, but no migration aids were available and there appeared to he no overriding technological benefit to SQL/DS.

'In the DOS world. I can't in why anyone would not make a Datacom decision," Conforto said. He reported no major problems in the conversion and said ADR offered excellent support, including software engineers to help with the pro-

ject.
Gordon Brown, database administra-tor at Affiliated Food Stores, Inc. in Kel-ler, Texas, used CA'a VSAM transparen-cy product to move the firm's data, used in warehousing and merchandising applications, to get to Datacom DB.

VSAM woes Brown said his shop was experiencing a major problem with VSAM. "If we had to major problem with VSAM. "If we mad to back out of a transaction, the files in-volved would not he in sync," he said. While most users would discard the

write most users would discard the transpirency software having used it once, his firm is leaving it in place as a lay-er of software. Affiliated does not have the programming manpower to actually convert its applications to run with Data-com DB.

com DB.

Although keeping the transparency software means spending money for the license and causes somewhat slower performance than would be available without formance than would be invasiable without it, keeping it in place saves money com-pared with the time and expense it would take to convert 3,000 programs. Nonetheless, compared with the previous VSAM performance, Brown reports,

performance improvements that are of-ten 50% or better. He said his shop has done some new development that is de-signed to work with the transparency in

ded, however, that if an organisation has the resources for a full conversion, they should do it.

coroning to Disc.

In best setting now, EDCS II is schooluled to ship in September at price impadaded to ship in September at price impason to the setting now, EDCS II is schoolted to the setting to the setti

or pursuing a number of engineers to work on related tasks at once, said Densid McInnis, vice-president of DEC's engi-neering systems group. By carrying on such parallel development, products can be created in less time and at reduced

Matra Datavision in Tewksbe Mass., and Schlumberger Technolog

use Decview 3D in its Brave3 pro-lin addition, DEC announced as ons of a number of computer-side are engineering (CASE) develo-iols, including XD Ads for the Mo-c. 68020, a VAX software enviro-r development of software for til

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Szuprowicz FROM PAGE 23

Expert system Helo deal computer o, crations are often a cop-out for the IS group, be-cause such Help deaks are per-ceived by IS as the simplest way to get into expert system with the minimum of risk. with the minimum of risk.
What's more, an expert system
Help deak is easy to implement
because the knowledge base per-tains to activities that are famil-iar to the developers.

is to the developers.

Is staffers are computer people, entrenched in their own worlds, often with little time or interest in the business of their solovers. Development of tegic expert systems reres close interaction with iness managers, who are the erts, and end users. IS involvement in such systems means giving up control. As a result, many IS departments pay lip service to expert system technology by choosing to devel op the automated Help desk, perhaps even secretly hoping that when little visible return on investment is observed, the expert system promoters will

Now we turn to all the other Help desks, which may be customer service operations that corporations are forced to main corporations are in the customer tain to quickly solve customer problems. As the world rushes into the knowledge-based, competitive battlefield of tomos row, corporations are realizing that survival depends more that

ever on quality of service.

Already there are human

Heln desks in many areas, but Help desks in many areas, but these are often prone to errors and seldom available when they are most needed. In fact, during peak demand periods, customers are wasting valuable minutes, if not hours, just waiting for an agent to respond. There is a massive telecommunications traffic jum in the making, fueled by the availability of free tele-

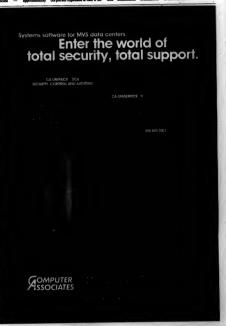
by the availability of free tele-phone access numbers and tele vision-supported publicity. Here, then, is an opportun-ity for IS to step in and develop strategic expert system Help deaks for their companies. One ould not tolerate more than ro minutes of waiting, while seir staffs needed up to 30 mi tes to answer complex re-

neita. This type of situation spells portunities for IS organisa-na. They should take the ini-tive to identify such strategi-plications and develop the in-runation infrastructures for the arketing of tomorrow.

Covia's Travelmaster hooks up with CRS

troduced earlier this year, has been bridged to the company's

ce, Covia an





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"Upgrade is limited to new feature upgrades such as SFT NetWare v2.12 to v2.15,

NEW PRODUCTS - SYSTEMS

Processors

Dynamics Research Corp. has ced a natural language processing workstation for retrieving ad hoc information from Oracle Corp.'s Oracle databases

running on Digital Equipment Corp. VAX computers. The Spock Information Station lets work group users enter oueries for Oracle databases in natural English, the vendor said. The data is then retrieved for

splay, printing or filing. The system is designed to be centrally located in a work group and consists of Spock software and a Intel Corp. 80386-based IBM-compatible personal com-puter with 4M bytes of random-

An Intel Corp. 80387 co-processor, a 1.2M-byte floppy disk, a 40M-byte hard drive and a color monitor are also included The system is priced at \$8.949.

Dynamics Research 60 Frontage Road Andover, Mass. 01810 508-475-9090

Data storage

Distributed Logic Corp. has in-troduced the Power Disk Series Winchester storage subsystems

Developed for Digital Equipment Corp. system users, the 5%-in. form factor enhanced small device interface (ESDI) drives reportedly provide up to 673M bytes of formatted capacity per drive.

Features include a 2.4M byte/sec, data transfer rate and a 16 masc average seek time, according to the yendor. All models are shipped with a disk con-troller and cable set, and pricing troller and cause set, and po begins at \$7,400. Distributed Logic 1555 S. Sinclair St. Anahelm, Calif. 92806

714-937-5700

An 8-in, parallel-transfer disk subsystem which reportedly connects Fujitsu America, Inc.'a M2380A Parallel Transfer Disk to a variety of host computers, including those from Digital Equipment Corp. and IBM's Per-sonal Computer AT, has been in-troduced by Storage Concepts,

The Concept 380 is reportedly capable of connecting as many as four M2380A devices, each with a transfer rate of 12M byte/ with a transfer rate of 12M byte, see, and a storage capacity of 889M bytes. Device drivers that are currently available include Sun Microsystems, Inc., a SumOs Versiona 3 and 4. Digital Equip-ment Corp., a VMS and IBM'a PC-DOS, the company said. The product is priced at \$26,900. Storage Connects 16.22 Deere Ave. Irvine, Calif. 92714 714-557-5064

U.S. Design Corp. has expanded its VIP family of storage subsys-tems with the addition of the is packaged in a 5%- by 19-in-rack-mount enclosure, accord-ing to the vendor. Pricing ranges from \$18,900 to \$35,100, de-pending on configuration. U.S. Design 4311 Forbes Blvd. Lanham, Md. 20706 301-577-2880 VIP/H, designed for use with Digital Equipment Corp. sys-

The product reportedly incorporates a protocol converter to allow connections to DEC sys-

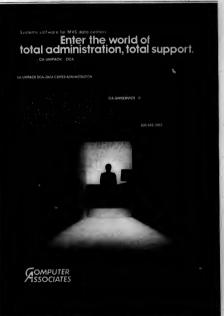
tems via the small device inter-face. The unit provides 760M bytes to 3G bytes of storage and is packaged in a 5%- by 19-in

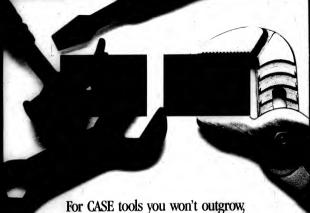
Real Time Enterprises, Inc. has announced a 5%-in. optical disk jukebox subsystem developed for machines from Hewlett-

for machines from Hewlett-Packard Co. a Apollo division.
Called the ODPM-5252IL, the product reportedly offers support for all Apollo nodes in-cluding the Series 3000, Series 3500, Series 4500 and the Se-ries 10000. The subsystem uses 25 platters and offers a storage

capacity of 16G bytes, and a many as three jukeboxes may b many as three jukeboxes may be used on one server, the vendor said. Scheduled for delivery in August, the jukebox will carry a price tag of approximately \$45,000.

rd, N.Y. 14534 716-383-1290





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NEW PRODUCTS - SOFTWARE

Development tools Utilities

National Advanced Systems has announced Vast-2 Release 1.0 and NAS Lib Release 2.0 for IBM MVS and VM environ-

ms. Vast-2 is reported to be an intelligent programming tool de-signed to assist users in optimal-ly vectorizing Fortram source code on the NAS AS/EX series code on the NAS AS/EX series vector processing systems. The Vast-2 precompiler converts DO loops that pass evaluation into Calls to the NAS Lib Math Vector Library of standard mathe-matical subroutines, the vendor d. Vast-2 Release 1.0 costs

NAS Lib Release 2.0 is an en-enced version of the mathematical subroutine library, which provides optimized vector and matrix operations. The product is priced at \$10,000. NAS

P.O. Box 54996 Santa Clara, Calif. 95054 408-970-4356

Software applications packages

J. L. Computer Systems, Inc. has announced Version 5.0 of its business software packages for DOS and Digital Equipment Corp. VAX/VMS systems.

Version 5.0 reportedly will published the published of the tentory management, plo cost-ing and susplus, invocingent, plo cost-ing and susplus, invocingent, plo 17,200 per published, published of the Tricking ranges from \$400 to \$7,200 per published, opportuning on the CPU justices. J. L. Computer Systems 300 Lancaster from \$400 Lancaster from \$40 Version 5.0 reportedly will

Peoplesoft, Inc. has introduced an SQL-based application sys-tem for human resource man-

Key components of the Human Resource Management System (HRMS) address payroll, tible benefits, personnel ad-istration, training and devel-nent, benefits administration recruiting. The system is said to operate on a single workstation, in a local-area network

ssing DB2.
The cost of HRMS for a single workstation is \$55,000. For use in a LAN envi nent, the price is \$210,000.

Peoplesoft 1600 S. Main St. Walnut Creek, Calif. 94596 415-946-9460

Amaigamated Software of North America, Inc. (ASNA) has an-nounced Release 6.0 of RPG/III.

with features designed to pro-vide increased through call procedures and improve migrat

tem/400 computer.

The software reportedly al-lows both users and systems pro-cedures to be called, and parameters can be passed to a

ture the same way they are passed to a program, the company said.

RPG-III Version 6.0 is available on a 30-day, free-trial basis, the company said.

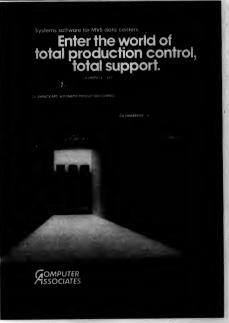
to the BM Application System 400 computer.

ASNA 4041 MacArthur Bivd. 4041 MacArthur Bivd. 62660

Davis, Thomas and Associates, inc. has announced a software utility designed to transfer, ar-chive, resegment and resc-quence reports from any combi-nation of VM/SP spool queues. Davis, Th

Called DTA/Copy, the s alone product reportedly su ports IBM mainframe hardwa running VSE/SP and VM opera

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programs, resources, and information—on a PC.
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PCs & WORKSTATIONS



Douglas Barney Battlinga phantom

1-2-3, it's out! It may ound strange, but Terry Bourne says he

is happy Lotus 3.0 is finally out. Bourne makes his money selling Microsoft Excel - often to besit unt and etimes hostile end users and information systems profes

A new spreadsheet from Lotus could be a nightmare. Yet Bourne is unperturbed. Maybe it's because he's spent time in the trenches getting thorough-ly covered with the muck of software war, When he was a Midwest sales guy for Excel, Bourne ned his head against the 1-2-3 wall so many times that he no longer felt any pain. Armed with a calloused forehead, he simply kept banging, and increasingly his head made it

through as select customers conparted to Excel If you're an IS manager from America's heartland, you've probably met the guy. You might have bought his pitch or own him out of your office. In 18 months, Bourne did some 270 presentations. It must have gotten easy after the first

Getting a PC foot in the door

Users do not need to be systems gurus for firms' investments to pay off

BY MICHAEL ALEXANDER

While end users seldom take full advantage of the applications they purchase, it may not mean they are not getting their money's worth, according to several managers interviewed recently who are responsible for end-user training and support. The bene-fits of using personal computers outweigh the initial investment in most cases, they concluded

End users will try to learn everything about a product and use it to the fullest, but I am not 100% sure that they need to cost-justify it to that extent," said Randall Mickan, menager of systems and programming at employers Insurance Co. in Dal-las. It is more important that the application meets the needs intended when it was acquired, he

"In most cases they use the apolications to the minimum apparations to the minimum rather than the maximum," said Jeffrey Goldwasser, director of MIS for the city of Bridgeport, Conn. Nevertheless, his department is pushing end users to expand their acquisition and use of His department a first priori-ty is to get end users to adopt the technology and then build on it by training them to use specific applications wherever they will have a beneficial impact, he said. "As long as they are living within budget, then anything is

within budget, then anything an improvement, and it is cer-tainly better than pencil and pa-tainly better than pencil and pachase of micros to get the small-er applications off the main frame. We don't have the resources to support PC-type operations, so from my end it is to my advantage." In compari son, PC applications are inex-pensive, Wasserman said. Several studies by manage-ment consultants and market re-searchers indicate that end users

searches indicate that can users undersus or even give up on applications that they have acquired. A study by National Training and Computers Project in Raquette Lake, N.Y., for example, noted that end users do not maximize their investments sufficient time learning the pro-gram. Too often, end users and their managers have unrealistic expectations of how quickly they can learn to use specific applica-

"Sometimes end users are immersed in getting the applica-Continued on page 44

Library of Congress: Thanks for the Memory

ONSITE BY PATRICK WAURZYNIAK

WASHINGTON, D.C. - Appi Computer Inc.'s Macintosh miomputers, compact disks and laser videodisks are being in-tegrated as part of the Library of Congress' plan to offer automated public access to thousands of

its rare historical manuscripts, photographs and political car-The library has built a proto-type system for a project called American Memory, which uses the laser disk technology coupled with Macintosh SE comput-ers to disseminate electronic

collections to libraries roughout the country.

Although much of the project is in its early planning stages, the Library of gress would even

line, said project coorator Carl Fleischhau "That's a glimmer in our eye," Fleischhauer said. "The project as a whole is very ambi-tious. It is so ambitious that it could be five to 10 years before a

large critical mass of information is available. But we have to start The Library of Congress which has sold and distributed its printed catalog cards to U.S. li-braries since 1901, initially will

make its historical collections available on laser videodisks and compact disk Portions of those collections will be grouped in a thematic se-ries, the first part of which has

been inspired by the library's program to celebrate the 200th tually like to make its collections available A M E R I C A N U.S. Congress to researchers on M E M O R Y The first anniversary of the

tion, planned for avail-ability in 1990, includes images of a group of 300 18th-century broadsides associated with the Continental Congress and 1,500 19th-century daguerreotypes,

early legislators.
A second series, titled "Visions of America: Seeing the Nasions of America: Seeing the Na-tion through the Lens of Popular Art and Culture," will include 20 hours of ethnic folk music re-corded in Northern California during the 1930s as well as 3,000 Currier and Ives prints.

The project, initiated by James H. Billington when he was sworn in as Librarian of Congress in 1987, has been in the planning stages for almost a Continued on page 45

Product reviews of Ultra-fite, Lucid 3-D and Viewink. Page 41.
 Start-up announces LAN file nearch system. Page 45.
 Police chief tracks area with DBMS. Page 46.

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A White Paper by DC

The Merging of PC LANs and 3270 Networks

LAN Acquisitions of the control of t

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DC/



By its very nature, the world embraces change. By its very nature, conventional programming does not.

PRODUCT REVIEWS

Viewlink reality fails to meet expectations

Imagine how useful it would be if, within a report, you could posi-tion your cursor on a key word and automatically link it to a spreadsheet related to that

Viewlink 1.0. from Traveling Software, Inc., is a utility pro-gram that lets you organise your projects and customize file man-agement by linking related items

some aspects of linking. Auto

top of Viewlink, and once you jet your system set up, you can ac-cess another application pro-gram from within Viewlink. Within an application, you can access Viewlink's macro capabil-ity and a copy/paste feature that works across different applica-

of the range for PC XT-compati-ble machines, though relatively slow compared with PC AT-compatibles and 386-based ma-

cmees.
Reflecting one of the trade-offs NEC made to earn the name Ultralite, the battery lasted only one hour and 45 minutes, even starting with a full charge and ig-noring the low-battery warning.

One carech
One of the most serious drawbacks of the Ultralite is the volatility of the solid-state disk. If
you do not recharge the machine
every five to seven days, the ran-

It combines an NEC V30 pro-ssor with a 9.83-MHz clock

Ultralite: Weight's great, less power a parallel port.
NEC also offers a card wi
256K bytes of RAM (\$299) th
can be used to store data or pr

The Ultralite does not mort an external keyboard or o

rolling Software's Viewlink features automatic linking

ms work. For example, a business project might use a report in Microsoft Corp. Word, several Lotus Development Corp. 1-2-3 sorrendsheets and Lotus Free-

ce graphics files.
Viewlink divides the screen into two vertical windows: views on the left and items on the right. As you scroll through the views,

Viewlink 1.0 Prior:\$149.95

the corresponding items appear on the right. Views can be built by file name, content, date or the application with which they work. In addition, views can coninstions of these cat-

JUNE 26, 1989

Link will link a file to a view based on text contained in the file. Automatic View Update lets

First things first Unfortunately, files must first be designated as items before any of these "automatic" features will work. Designating files as items is basically a manual process and ean be done on a file-by-file basis or more globally via a menu op-tion — a very slow process if new files are scattered scross several directories. If a file has not been designated as an item, it is likely to be overlooked dur-

disk. However, having a view with even several hundred files

acros can be used to load an ap-ication without a file, load an plication with a selected file,

Lucid 3-D Version 2.0 adds a spreadsheet dimension

Dac Software, Inc. has released Version 2.0 of Lucid 3-D, a spreadsheet numerous that com-

lick. Its cut-and-paste feature lets you transfer data to and from the underlying application.

Aside from randome and smooty residency, the read was use of the product is it a shifty to work with multiple pareadishests in up to mise overlapping win-dows. Any cell can contain data from any worksheet, and the initiage can be done at an unlimited num-ber of levels.

ese features

Lucid 3-D Version 2.0 sorts in up to nine win



Viewlink

CONTINUED FROM PAGE AT

Lucid 3-D CONTINUED FROM PAGE 41

publicaceme to novices, which is not to ply that experienced users will be able master it quickly. At least Viewlink's user interface is in-designed. Once you become familiar th the menu layout, you can quickly july up command strings using the high-hed letter in the menu options.

dietter in the menu options.

plication macros represent a key
onent of Viewlink and are used to
the programs with a particular data
Jefortunately, you'll need the manyou want to modify or add macros,
he manual offers an incomplete dis-

T I FAST VIEWLINK'S user interface is well designed. Once you become familiar with the menu layout, you can quickly whip off command strings using the highlighted letter in the menu options.

failure during some operations, files will not be closed property, and Verwinks will warn you of this the next time you run it.

The automatic application macros can cause trouble. They override an application's normal use for large. Another problem occurs if you attempt to record a macro using a name that already exists. The program provides no warning and leave proceed, but the macro does not work.

Free — but not toll-free — phone support is available weekshys from 8 a.m. to 5 p.m. Pacific time. The technicisms are helpful. Viewlink, priced at \$149.95, in a ground-breaking and useful product, but utility programs are generally designed to make life easier, not add another level of complexity. Viewlink requires a fair amount of additional work before it yields

He also doesn't realize Hewlett-Packard makes PCs.



Illtralite

CONTINUED FROM PAGE 41

that need to be oversized, such as Return, Tab, Buckupace and Shift, are oversized. The Ultrafite documentation does a particularly good job of providing intro-factory information for the inexperi-mond user, but it is not nearly as good as a vicreme. There is no on-line Help sys-

tem. The weight and size of Ultralite are im-portant phases in case of use; you can overlook a multitude of evils for a machine this small and light. In addition to the limi-tations of the keyboard, battery life, the need to make sure it in plugged in regular-ly and the obvious limitation in file-stor-

age capacity, this machine is lacking some of the options for external connections that are built into other machines. De-pending on your specific circumstances, you may need to buy the optional parallel port. A built-in communications program

foncy assembly letting up Ultrafile is a map. The total rocess takes about 15 minutes, which in-hardes preparation of the RMM disk. Ultrafile feels more sold than most uppo computers. The cover for the extrast drive connector is about the only rat likely to break; it tends to open easily all ready knocking off its hinge.

NEC defen a con-perce warranty for Ultrafile.

to so NEC-ours to us NULT-authorised repair location.
You can extend the original warranty
for up to three additional years at an annual cost of \$299.90 for the 1M-byte version and \$369.90 for the 2M-byte version. These prices also include 24-hour

cate while traveling should consider use Ultralisis. Clearly, NEC's laptop computer is in-tended to provide the ultimate in size and weight savings but at a price. At \$3,099 for the vernion with the 2M-byte RAM disk, the Ultralist costs roughly the same as NEC's Multispeed HD with a 20M-byte hard disk. The 1M-byte Ul-tralist costs \$2,999.

Low-cost laser printer debuts

BY DOUGLAS BARNEY

NORWOOD, Mass. — Laser geisters cost as wifel bet of money because most are actually based on consultry, offen is money and foregreen costs of the cost of the cos

DISOSS



well as plenty of options. At the high end, you can get up to 8 accessory sitos, 620 Mbytes of hard disk storage, and 16 Mbytes of RAM. And on all models, you get a choice of video solutions and the flexibility of using either 5.25° or 3.5° disks.

Beyond this, an investment in Hewlett-Packard PCs allows you to choose confidently from thousands of software applica-tions and peripherals. HP's strict.

But the most important feature the one you won't get with any the one you won't get with any other personal computer, is Hewlett-Packard reliability. For 50 years, HP has promised, and delivered, exceptional quality in everything from calculators to HP LaserJet printers.

Finally, every PC made by

ewlett-Packard is backed by Hewlett-Packard is backed by an extensive network of trained, authorized dealers. For more information and the name of your nearest dealer, call 1-800-752-0900. You'll soon realize what an HP personal computer can do for you.

There is a better way.

HEWLETT PACKARD

Rarney

where of this Bourne so much that they men him a rise and bestormed in him present in a rise and the state of the him he redd title of "Excel Push Team Lead-"," But Bourne settl does the name when ye also people on the concept that character mode is dearft and that menus, being bourne, bit mapping and color are of ut-sout importance. Not everyfoudy elieves all this — yet.

Like may good andder, Bourne has seen ready for battle for years. His prod"that lices here on deriving arments in the lices here obtained arments."

ex, unconsistent and water and experience of the control of the co

se kind of people.

Most would be scared to know that Most would be exceed to know that Lottus is coming to town. So many have lost the battle of wills and smarts to the company from Caubridge with impacca-ble aim. Microsoft, though, has revenue of over \$700 million and more than 3,000 technically predicted bodies to throw around. They're set to fight, and by golly so in Lotsu. Best clear the streets. Despite the firstration of typing to displace an industry standard and being heavily outsimather of by Lottus troops,

use time we waited into an Egghesal Soft-ware computer store and saw a man about to walk out the door with 1-2-3 un-der his arm. Bourne saked the man if be had seen Excel. After a bit of talk, the guy left — with Excel.

Frences solid. Microsoft might not be afraid of Lotus, but I know of a mainframe spreadsheet vendor that is. According to a company marketing official, when Lotus announced its still-unshipped mainframe version of 1-2-3, about 12 good prospects immediately canceled. They thought the Lotus product was around the corner and didn't care that an existing product ran on 370s, read Lotus files and could handle something like 100,000 cells.

I think I've heard this com ewhere before . . . from another frame spreadsheet vendor.

Dhose out of bounds. Some compa-give who move to Unix pick one strategi-version, then sindwy move to others as markets and technology develop. That, the third quarter of this peer, it should be-gin releasing numerous Unix versions of Dasen IV. In fact, the firm is working on some 20 different Unix versions, which will be distributed through Offin relation-ships. Look for a 10EU Unix version to which is already to the control of the con-viction in the control of the con-trol of of th

complement its VAX VMS product.—
which is already being demonstrated to
key accounts—as well as versions for the
NCR Tower line. Disse IV is almost entirely C-based and is also largely developed on Unix-based systems from Sun,
all of which eases the porting burden.

PC foot

CONTINUED FROM PAGE 37

n up and running, but the application it fully utilised because they are going ough a culture shock," said Frank Gir "They are not prepared to deal with the initial shock of when the application is first put to use. But we find that over time

mrst put to use. But we find that over time they mature and come to understand the application and use it fully," Girour said. What follows is a "renaissance of enthusi-asm," be added.

sm," to succo.

End users who have gone through the nitial experience of adopting an applica-tion are more ready to take on additional

pplications and get up to speed much sater, Giroux said: "At first they are verwhelmed, but then they buy into the

ng and time, several m rs said. Requiring end users to justify ad of time how they plan to use specific dications also helps to maximize use cause it requires commitment on the urt to carry through with the rations r purchasing an application, they said. "Our attitude is that if they can demo

strate any need in buying, we're going to be in favor of it because we feel that it is a step in the right direction," Wasserman

emplained. "We have implemented certain-burying practices where they have to by your demonstrate next. We've also at-tempting to follow up. There we find the they are not using the application to c-pacity, we exhestle training person to ca-troning in part of the solution, al-though it also helps to have the support of certain replications, from the support of certain replications, from provided out. "If each sense person person to the sup-tice of the supplementation of Certain replications, from posteriol cur-"If cost users person to the sup-

-

pplication, their learning goes slowly. but if it's an end-user-driven application But if it's an end-user-driven application that management wants, it goes much faster," he said. "In our organization, many applications are driven by end users and are supported at the highest echelons so that there is accountability and justifi-cation for the applications."

GOOD NEWS



The results are in, and not one, but <u>four</u> of the industry's leading publications name Multi-Tech as the modern of choice.

Macazine editors and corporate buyers alike put nearly every modem on the market under close, demanding scaling

"Solid buy"... "Top performer"... "Slew of extras"...
"Well built"... "The price is right"... these are phrases used by reviewers to describe the Multi-Tech MultiModem.

Editors at PC MAGAZINE in a review of 87 moderns chose Multi-Tech for their Editor's Choice Corporate buyers surveyed by PC WEEK gave Multi-Tech their highest scores for quality, overall performance and organized documentation, INFOWORLD, in detailed line impairment testing, named Multi-Tech the unquestionable "top performer" And results of the DATA COMMUNICATIONS Datagro User Review prompted editors to comment. "It's no wonder that Multi-Tech's performance and market share continue to grow

Representation PC Magazine, May 12, 1967. Copyright \$7197.24 Conventioning Company - Copyright State by Modelship Copyright State Copyright St

Fileshare smooths the information search road

BY DOUGLAS BARNEY

BELLEVUE, Wash. — Start-up Saros Corp. recently announced Fileshare, a system that allows local-area network users to nearth for information and share-

nies.

The system, which supports a variety of LANs and operating systems, is sinsed at easing the task of finding files via graphical query tools and allows multiple users to work on individual files with version control.

Files can be sought without having

ed, a user needs to supply either a ne, topic or date. In addition, users can rch for files across multiple LAN file

search for hies across multiple LAN lise and database servers.

Plieshare works with text files, worksheets and database files. It can also work with files without loading the application that created them. The product atores files so they can be transparently secured by a number of PCs and located them in areas specified by a network across specified by a network

nistrator.

The system includes a portion of the inton-Tate/Microsoft SQL Server for erying but does not require a database addition to its client/ser

cate, according to company Chairman Wayne Carpenter.

The system uses Microsoft Corp.'s Windows as its user interface and supports MS-DOS workstations, OS/2-based servers and any network that uses the

interface.

Fileshare is currently available and costs \$425 per workstation. Discounts will be based on volume.

The nystem is the first in a series of

ll be based on volume.

The system is the first in a series of oducts aimed at data sharing and work-oup-style applications.

Library CONTINUED FROM PAGE 37

year, said Fleischhauser. He noted that it library has proceeded, slowly on the preect partly because it had to wait for right technology and because of the in regist technology and because of the inregist technology and because of the meane task of cataloging its collections. Psischbourer added that the library is submitted to Congress an initial busy request for about \$1 million in funding. A collection that may be included in the

Pieicchaser added that the library has unbarried to Congress an initial budget request for about 51 million in funding. A collection that may be included in the automation project in a large volume of photographs from Detroit Publishing Co, which at the turn of the contary amende collection of some photographs from all over the country. The library's prints and photographs division has more than 12 million thems, in separate photos and prints, Pieicchabuer noted.

"These are in many ways the hidde

HESE ARE in many ways the hidden treasures of the library. You can get a book, but there's no way to get many of these manuscripts and archival collections."

CARL FLEISCHHAUER LIBRARY OF CONGRESS

said of the photo and print collections.
"You can get a book, but thereis no way to get many of these manuscripts and archival collections.

val collections.
"The question is, how do we make
these evaluble? In the past, people have
come here and looked at them. And the ifbrary has in the past prepared them on
microthe."
The identity will ministly use Macistonia
SE microcomputers with Apple's Hypercard as a database insided with compact
card as a database insided with compact

The library will initially use Macintosh SE microcomputers with Apple 8 Hyper-card as a database linked with compact disk and videodisk players from Pionsei Communications of America, Inc. and Sharp Electronica Corp. The prototype uses the natiog videodisks for toxing still photographs and grants and uses an Apple scamer to scan certain digitated information into the vysiens 8 Hypercard data

The project's planners, however, do not have a preferred method of handling audio. Nevertheless, Fleischhauer mit bey are exploring technologies such a compact disk/read only memory/extent of architecture (CD-ROM/KA), compact disk/read only memory/extent of architecture (CD-ROM/KA). The compact disk/read only memory (CD) and digital video in terractive, CDVD, Fleischhauer mid 'CD (ROM/KA, CDI and DVI all show promise and we're interested in any other way and we're interested in any other way

Pleaschisser, who characterised the Invaria current protein a consequent of the Consequent of Conseq

MULTIPLIES

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Cops pound faster beat with on-line system

BY SALLY CUSACE

on Chief Willie Ray of the Cord

minals, a Wyne 1 (czmowy)

IBM 3270-type unit.
Both are linked to a host IBM Personal
System/2 Model 60 running SCO Xenix
3.2. The police chief said that ideally, the
force could use another terminal dedicated solely to name-searching functions.

attich in time

The software has proved to be a time-saver when locating court papers, dock-ets and related reports, Ray said. "We used to have to pull down the

E USED TO have to pull down the books and search through the records. Now we just enter a name, and the information appears on the screen."

> CHIEF WILLIE RAY CORDELE GA. POLICE DEPARTMENT

terms and

Gillard, records clerk at the lie, Ga., police department, has ng the PDAS program since rd said it was purchased to ac-iste the tremendous amount of ark generated by the court sys-

the software.

All court traffic tickets, related deposi-tions and dockets as well as complaint and incident reports and officer's logs are en-tered into the system each day. The PDAS program also provides a history

Incident reports, at least those of a criminal nature, are compiled and sent to state public safety officials on floppy

Pick if up
"We need a little more speed," she says.
"That 6000 is awfully slow; it takes us
two or three days and about 30 diskettes

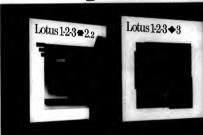
hancement requirements.

Clarkin provides support to all his clients via a dial-up modern and said that most problems that might possibly occur

vendor.

A complete PDAS system costs \$10,500, which includes 40 hours of onsite installation, training and support. According to Clarkin, there is a 120-day warranty on the product, after which cli-

Lotus introduces so sleep better at ni



ne 3's 3D design lets you work with a sheets gud files sureultessounty

Spreadsheets are like lots of things in life, one size doesn't necessarily fit all Different users work with different types of

computers. They work on different tasks. And they have different requirements.

That's why Lotus has created two exciting new spreadsheets: 1-2-3° Release 3 and 2.2. Each designed specifically to maximize

performance on different types of PCs and work together across different types of PCs.

Release 3 is nothing short of a breakthrough in software technology. Its new. true three dimensional design lets you organize, analyze and

> navigate your way through spreadsheet applications with incredible speed, power and ease, What is it that makes

Lotus's true 3D different?

Project management system par for the LPGA course

BY RICHARD PASTORE

TOLEDO, Ohio — Organizers of the Ja-mie Farr LPGA Toledo Classic golf tun-nament are steering clear of sand traps with the help of a project management

da Cynwyd, Pa. Elftrutum com



NEW PRODUCTS

detar Technology, Inc. has m a laptop-size deaktop comp

puter AT-compatible is com the 16 pounds and has an Intel C 86 CPU, IBM Enhanced Graphic

mething to help you ght. Fitted sheets.

Well other spreadsheets provide two axes for you to work with: rows (height) and columns (width). But Release 3 gives you a third axis

(depth). So you can perform operations using any spreadsheet function through up to 256 worksheets simultaneously.

Equally impressive is Release 3's presentation quality output and its selection of advanced analytical graphics. And its Data External command lets you bring data from external data-

or S's HotView graph wi

bases directly into your spreadsheet without

leaving 1-2-3. You can also create a wealth of customized applications from simple forms to sophisticated turnkey systems using the new Lotus Add-In Toolkit for Release 3. Release 3 is available now for DOS or OS/2"

users and is the one product designed to take full advantage of the 1 Mb memory and processor that is standard on today's 286 and 386-based PCs. We've also created a new version of 1-2-3 for

people who work on all types of PCs in a 640K DOS environment. The soon-to-be-released 1-2-3 2 2 is

designed to maximize the memory of those PCs. Release 2.2 provides extraordinary speed as well as presentation quality output with Allways built-in, And Release 2.2 offers improved

analytical power in the way of spreadsheet linking. undo and minimal recalc

Plus, hundreds of add-in and companion products that work with the 1-2-3 you're using now will work with

Release 2.2 1-2-3 2 2 and 3 provide the highest compatibility with your present 1-2-3 files, macros,

applications and with each other. The new 1-2-3 family offers full networking capabilities and because the new products use

the familiar 1-2-3 menu, it protects your investment in training and support. Lotus plans to maximize

your investment in the future by introducing 1-2-3 for mainframes, workstations. OS/2 Presentation Manager and Macintosh." Offering your company's

computer users maximum performance on their respective PCs is a big part of your job. Seeing that it all works together in harmony is a big part of our job. And that should help you get a good night's sleep.

Macintosh products

The PC runs at 8 or 12 M

The New Lotus 1-2-3 The spreadsheet of choice

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operation at 81/2 mrz or 81 mmz.
The companion 7065 offers 16MHz or 20MHz 80386 microprocessing, making either unit a high-performance solution for a LAN as a LAN server, examining the content of the server of an examining the server of the

Powerful performance perfect for the most demanding LAV server and high-end multi-paser applications. The 200Hz 7070 Network Server delivers up to 16MB of RAV with the analishle storage bays for total flexibility. Effortlessly supports heading network operating systems and can platform complex CADC/MACAE programs.

A ton-profile but highly-integrated 80286-based workstalian. The P-80's build-in functionality leads competitors with misers committee and integration of the profile and integration of the profile and a mosse part. Switchable 81/24Hz and time expansion sixts make this compact performer readily expandable and adaptable for a variety of applications.

WORKSTATION

Arcnet

The industry standard for packing big 12MHz performance in a small foot print. An excellent solution for both LAN or standalone applications, the 7025 Intelligent Workstation also features integrated disk and video controllers, providing two expansion sixts for add-in adapter boards.

The Memorex Telex Intelligent Systems Series gives you a single source for a complete line of

state-of-the-art workstations Token Ring LANS for LANS, WAYN, or as stand-domestic with full connectivity for 3270 and midrange systems. For airlines systems and the standard and connectivity for 3270 and the standard and the systems and the standard and th solutions and customizes them to meet end-user requirements.

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1224 PRINTER SERIES

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1197-D/W2

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1197-C2 COLOR



An ergonomic and highly funcional righty available with green, anaber or balse for while it? mention, anaber or balse for mention, the property of the production of the computer of the production of the computer of the production of the production of the production of the production of the passa and one printer and #8.1 f02or 122-8ey keyboards. Patterns print truth, host addressable printing and support of twisted paur or twinaxial crabbing. The 1224 series of intelligent 4224-compatible destrop matrix printers utilizes the advanced functions of IPDS support such as graphs and barcodes. 256K or 512K memory. Handries 250 or 400 gs in one, lost or eight culors and offers wersatile paperhandling capabilities.

Offering brillhant, two- or sensicolor display modes, the 187-C2 Color Dhappy Station supports up to three concurrent sessions two display and one printer) and four terminal modes. Use with 83, 102 or 122-key keyboards. More features include print tran, host-addressable printing, and support of twisted pair or twinaxial cability. 1196 A/B

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ments Period

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The 3261/81T Subsystem is the midrange industry standard for save restore operations. Pully compatible with 3422 and 3420 tape systems, in offers densities of 1600/6250 bpi with data transfer rates from 200kb to 1250kb nor second.

operator intervention

The 1196 A/B fuit-function 12* Monochrome Display Station features a choice of 83-, 102or 122-key keybourds as well as bost-addressable print support. Supports twisted pair or

twinaxial cabling.



2000 DIEV DRIVE SUBSYSTEM

890 SOLID STATE SUBSYSTEA

The 3890 Disk Drive Subsystem, our latest generation of disk drives, is an intonostive approach to triple capacity, We reduced head disk assembly site to night inches (from 14*) to improve reliability and service ability, And to offer the industry's best price and capacity per square foot.

Large Storage SYSTEMS generation ago. And each succeeding sense

Who packs more facts in a square foot than anybody? Memorex Telex.

We pioneered our first disk drive storage unit a

A D each succeeding generation of Memorex Telex devices - from tape to solid state to cartridge robotics - has meant more costeffective storage, processed faster, easier to expand,

and simpler to operate. All with floorspace savings that crowd neither

But hardware is just the beginning. Our Customer Engineers and support teams aré peripheral, channel and mainframetrained. From the first analysis to the last test run.

cómputer rooms nor budgets.

you'll get the seasoned systems service you need in your nonstop, real-time environment.

We're building on the success and reliability of the 5480 Cartridge Tape Subsystem with a simple, space-saving idea: stack them! This 5480 Special Package offers the highest capacity-per-square-foot in the industry, and sets new standards for ease of operation and maintainability. New robotic options vastly increase data handling flexibility and speed.



1Mbit semiconductor stors technology makes the 6890 Solid State Subsystem high-performance system perfect for critical, frequentlyaccessed data. Solid state means no moving parts and no seek time. Its thousands of operations per second boost user productivity. Holds both temporary system files and permanent production data.

1174 NETWORK CONTROLLER

1192 ENHANCED FUNCTION DISPLAY





The highly-reliable choice for high volume printing, the 1324 Goax Matrix Printer is rugged, supports 1PDS and is user-friendly, Forms modules make swapoust fast and keep paper alignment perfect. Handles four- and eight-color printing Best of all, its LCD message center speaks in English, not cryptic codes.

1324 COAX MATRIX PRINTER

A versalile net sorting patterns in 220 environments, the 11th Network Controller offers user benefits had go for bevious comment standards. Supports up to 86 divives and up to four 3270 bots of errors. So you'll get cost savings and greater flexibility in network processing, with 3270 and asynchronous communication conhiend with Them Ring-based networks. A totally new set of standards for connectivity and networking residually.

With an array of screen stars, substantial deployments and a new modular design, the INIX Enhanced enhanced enhanced enhanced enhanced operator productivity. These displays offer featurers you can't have on other 3270 jaroducts—programmable-base coders, field marking for clear sterritization of duct crity fields, screen shape for functions and food starty fields. Serven shape for functions and food starty fields with the starty of the functions and food starty fields side only the fields of the starty of the functions and food starty fields.

CISA COMBINED

3270

Tro CB4 Combined Function
Tromalian provides deviding misconsistent
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compatable terminal provides multiple
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applications and integrated telephone
features. That means open above
the statement of the provides system information and early
update system information and early
update system information and early
combines functions better.

Perhaps nowhere is the Memorex Telex commitment to value-added innovation more evident than in our 3270 market displays, printers and

3270 NETWORKS controllers. And no one can touch us.

It's a simple and successful formula: We listen

It's a simple and successful formula: We listen to our customers, anticipate their needs, and deliver solutions. Vear after year.

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NETWORKING

STREAM

Jeffrey N. Fritz

Users share ISDN wealth



d check out screen-shar or the ability for users on two or more personal computers to view and in some cases, interview and, at some cases, unco-act with one another's pro-grams. Besides being one of the more interesting ISDN applica-tions, screen-sharing can sigcantly boost user productivi-

Most users are familiar with file transfer and interactive char screens provided by many telecommunications programs. Screen-sharing is different. Two users, even if they are in dif-I wo users, even it they are in an ferent locations, can simulta-neously work on a "work group' document. Since ISDN offers relatively fast data transfer rates, up to 64K bit/sec., infor-

rates, up to 648. Bt/sec., mor-mation flow between computers is nearly instantaneous.

Throw in the benefit of voice communication provided by ISDN, and screen-sharing on a new dimension. Even gh they may be miles rt, users can enjoy the same efits as they would seated

gether at the PC. Remote access packages sch as Carbon Copy Plus by Me-

Rockwell takes ISDN plunge

Features such as modem pooling result in substantial cost savings

ONSITE BY ELISABETH HORWITT

RICHARDSON, Texas - Rock well International Corp. recently ned its toe into ISDN waters. installing a simple, Centrex-like network that provides basic cost-reduction through modempooling and other simple mea-sures. But the holding company is still evaluating more ambitious

used by the division are voice

2.400 hit/ said Char

ing ISDN to link inco iers, as well as support of aling System 7, the ISDN

systems, he added.

There are several ISDN applications that Rockwell has decided not to implement yet. One is circuit-switched data, which would allow data transmissions to run over the 64K bit/sec. B channel rather than the 16K bit/sec. D channel of an ISDN Basic.

It sees no need for higher speed terminal-to-host connections, given that the host cannot Continued on page 51

Apollo vields patent bid to lord of the Token-Ring

BY PATRICIA KEEPE

CHELMSFORD, Mass. - With knuckled under earlier this month to Olof Soderblom's de-mands that it license patented Token-Ring technology. Token-Ring technology.
Soderblom is the holder of multiple Token-Ring patents and a vice-chairman of Netherlands-based Willemin Holding B.V., which oversees in the his nature.

"We were all hoping Apollo said do our dirty work for us," needed OTF co-founder Rob-t Metcaife, who also co-found-

networks said the firm believes the Soderblom patent is not ap-plicable to the 802.5 Token-Ring technology and claimed other OTF members have yet to reach agreements with Soder-

relevant because it does not standard 802.5 technology. e scannard 802.5 technology, e spokeswoman added. Metcalfe and other OTF ven-rs believe Soderblom's patent ims are slowing the growth of icen-Ring by creating a barri-tol lower dealers costs.

with it one—
ing fee, the committee complained bitterly that it wasn't
nominal enough," he claimed.
"But when IBM came in Jwith
Token-Ring], the IEEE showed's

Continued on page 5

Progressive Is carves \$3.6 milli telecom hill by o

DEC sweeps up factory floor profits

BY ELISABETH HORWITT

AMBRIDGE, Mass. - Digital AMBRIDGE, Mass. — Digital quipment Corp. a Decnet re-sined the lion's share of the fac-ory-floor networking market set year, while users awaited eneral availability of Manufac-

a nanoru or venoors, AMR miss.
Overall, there are now approximately 25 MAP production networks and about 250 pilots.
MAP must gain market share
at the expense of two major entrenched rivals: Decnet and per-

percent had standardized on DEC's VAX/VMS as their pri-

Shoo talk Decnet reaps greatest end-user dollars amo networks are growing in popularity MERCHANT OF PRINCIPAL PRIN

802.5 (IBM and third po

OSF calls for Unix net specs

BY ELISABETH HORWITT

CAMBRIDGE, Mass. - The

ble users to di work, OSF indicated. The services could include, but are not limited to, the following: ing services, for designat-sources across the net-

e network security. ation services, to ac-

data representations.

• Distributed file systems, to provide file access across a mul-

HIS REQUEST is for a core set of tools to enable users to distribute applications across a multivendor network.

Hewlett-Packard Co.'s Apoll ivision and Digital Equipment forp, have already announce rp. have already announced eir intentions to make a sub-ission in the RPC category. heir submission will be an ex-niced version of the RPC, sich Apollo developed for its t-twork Computing System. The DEC-Apollo effort could

robustness to the OSF Unix tform, said Peter Schay, a gram director at Stamford,

the RFT is due July 28, nounced. Completed sul nos are due Oct. 6. Imple tations must conform to dards that have already accepted by OSF, includin IEEE 1003.1 Posix syste

Insurer consolidates telecom to save

BY ELLIS BOOKER

CLEVELAND — Progressive Casualty Insurance Co.'s recent move to consolidate three sepa-rate telecommunications systems into one is expe the firm \$3.6 million.

The costs for the insurance mpany's telecommunications raice totaled about \$10 million

on contract to provide voice nd data services to its 189 U.S. cations to MCI Con

tions Corp., which best or

surer is a participant of the In-surerce Value Addad

1987.
MCI will provide toll-free service and its Vnet service — the firm's virtual private network for voice communications be-



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nent network, will pro-facilities for this net-

Progressive is still evaluating a carrier for its fractional T1 needs. The firm will retain Williams Telecommunications Group, Inc. in Tulsa, Otda., as the provider of a T1 backbone network that links five of its net-

FROM PAGE 49

Rockwell

handle speeds much higher than 9.6K bit/sec., Covey said. Rockwell is unlikely to re-place its LANs with ISDN links manager 0 ed Jack Tilbury, me





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een transfer is significant.

ICI to link facilities

Fritz

FROM PAGE 49

re III by Dyn essor Associa al port to an ISDN B channe

However, when teamed with an ISDN B channel on with an ISDN B channel operating at 38.4K bit/sec., it really begins to fly. Color screen: are transferred in less than a sec-

Besides speed, the system is aid to provide more sophisticat

light information or just dood on the screen and have it be v

ng to the average bus

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Such interaction is useful to my group preparing any type of presentation. I had a meeting s morning with a department irman, for example, who dis to generate student docu-nts in tandem with one of his

The nice thing about screen-sharing vs. straight file transfer is that you can see the changes as they occur rather than sug-

le is quicker response time and he ability to talk over the phone during the process. Wh ISDN services finally become us, you can set up g, city or across

ISDN acreen-sharing doe we its drawbacks. The ope in of the remote PC is so m of the renove appy that it is some forget which much re actually using.

After receiving an importa file from a company in Detroit for example, I set up my com-puter to be a remote terminal

pleted, I sat down at the PC to begin work on the file. With a start, I noticed that the file was missing. I feared it had somehow been crused. Then I noticed that my hard-drive light did not come on in response to the DOS directory

it fimily drwned on me that the hard disk I was so frantically scanning was not mine, but the

ISDN acrees-sharing can a so efficient that it's accepting hard to tell exactly which PC you're operating from. at West Virginia University is Ma

DEC

FROM PAGE 49

will continue to be vision; the early to mid-1990s, we the Government OSI Pro standard will push agencies, tractors and their vendors to grate to the OSI standard. PC connectivity is curre

sctory LAN mannes, was revenue growth. Pushing this trend, AM said, is the increasing number PCs on the plant floor. The fir estimated that close to one m

sends of IBM's recent amous sent of a 16M bit/sec. ven MR said. Novell and Un sans-Bass, loc. have also in uced 16M bit/sec. Token-

Further on the MAP
According to AMR, MAP will
make some progress this year in
the following areas:

In the U.S., General Motors
Corp. is clearly the leader and is
increasing its investment in
MAP implementation. The Sat-

port is con

owide product o



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For more infor.nation, call toll-free 1-800-327-4440 (in Florida, 1-305-476-4811). Federal Government users, 1-800-327-7909 (in Florida, 1-305-476-4452). Omnimux 8000. Now, that's more like it. But then, that's Racal-Milgo. Reaching beyond today's standards. apro, Eler Battegs of Network Menageroustonal Data Corporation (EVC), Quagement Market, October, 1988.

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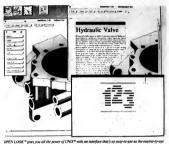
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"ComputerLand

wasn't just selling us, they were with us for the long haul."



when discussing options with a prospective buyer.

ComputerLand Account Representative Don Bibb chose IBM computers for the Maxfly system because "continuity and reliability were key for them. With IBM computers, they got state-of-theart quality, and a company that would

be able to keep up with their growth." With the help of their one-of-a-kind computer system, Maxfly Aviation's sales have nearly tripled over the last three years, and it's been ranked among the 100 fastest-growing companies in southwest Florida? What's next for these high-fliers? International sales. says Scott. Bigger jets and commercial planes, says Don. Whatever course they set, the sky certainly won't be the lim



MANAGER'S JOURNAL

EXECUTIVE TRACK



information systems. Forrest has been employed at Tam-brands in Lake Success, N.Y.,

Prior to her career at mbrands, Forrest held po-ions at Peat Marwick Main Co., Nabisco Brands, Inc. d Thomas J. Lipton, Inc. She is a graduate of Boston University and holds an MBA from Pace University.

Tambrands is a Fortune 500 international manufac-turer and marketer of person-

Bill Barnett was recently appointed executive director of IS at Fluor Daniel, Inc., the principal subsidiary of Fluor

Corp.

Barnett, 47, is responsible for overseeing all IS technologies, including computing computing for arrivals. and telecommunications, for the Irvine, Calif.-based com-

ny's domestic operations.

Barnett began his career
Fluor in 1980 as director of

at Fasor in 1960 as arrector or automation engineering in the Greenville, S.C., office. Prior to joining the company, Barnett taught computer engineering for three years at Clemson University. He has also held positions as a technical staff member at Bell Lab-oratories and as a process-control engineer at Du Pont

arnett received bache or's and doctorate degrees in electrical engineering from Clemson University and holds a master's in electrical engineering from Rutgers Uni

Who's on the go?

nging jobs? Promoting sistant? Your peers wa now who is coming and z, and Compute going, and Computermental wants to help by mentioning any IS job changes in Execu-tive Track. When you have news about staff changes, be sure to drop a note and photions department write to Clinton Wilder, Senior Edi-tor-Management, Comput-erworld, Box 9171, 375 Co

Economies of time and money

The best things in life aren't always free, but they can be obtained at a small price

BY ALAN J. RYAN

ometimes the simplest ideas prove to be the most useful. • At Blue Cross/Blue Shield of At Blue Cross/Blue Shield of Connecticut, a rarely used facaimile machine has in six nonths become the lifeline of the com-any's sales force.

At Trump Pizza Hotel and Casino in

At Trump Pissa Hotel and Casino in Atlantic City, a coupon program has been automated, allowing for faster moving lines at the casino cashing a lin one department at Du Port Co., the use of MCI Communications Corp.'s MCI Mail instead of overnight mail services has belped accelerate

contract turnsround The best part? These simple ideas are not accompanied by high price tags. They are examples of how infornation systems groups can put simp deas into practice and realize intan

ble benefits. Por instance, David Fusco, Blue Fore instance, David Fusco, Blue Foren/Blue Shield's project manager of MIS for the sales and marketing areas, said the only investment needed to create what has become an essential tool for the sales force was the time it took to design a standardized form that could be faxed.

The one-page form allows the com-pany's 30- to 40-member sales force to simply check off items relating to its les activities for the week. No one or Fusco's end has to decipher myriad adwriting styles because all of the information comes in the same format,
"Before, information might have
come in on a napkin from a luncheon

come in on a naplin from a hancheon the salesman had with a client," Fusco said. Now, the sales representatives fax the information to Fusco'a office each Friday; by that afternoon, the data has been compiled into an execu-tive nummary sheet that is distributed



the reports that came out weekly con-tained information that was two weeks old, he added.

Additionally, when information is entered into the Blue Cross system, it is also entered into a database of sales and competitive analysis informati for the future, Fusco said. for the inture, Fusco sand.
Trump Pizza hires an outside con-nulting firm to put together databases of potential new customers and sends them promotional coupons, which are redeemable for \$10 in gambling to-

But the marketing promotion

ed to be almost too popular lines were forming with people wait to cash in their coupons for toke Subsequently, the process was auto mated to case the problem and at very modest cost, according to Ma thew Meldon, a microcomputer man

be exchanged for chips, someone had to look up the coupon bolder's name on a hard-copy list, Meldon said. That

process was improved so that a nam could be keyed into a microcompute cutting the processing time in h

Change coming? You can count on it

BY CLINTON WILDER

orget about "chief informa-tion officer." The information systems executive of the 1990s should more appropri-ately be named "chief change "according to Terence V. Neill, officer," according to Terence V. Neil, managing director of industry programs as Andersen Consulting, Inc. Managing change in the No. 1 chalenge facing the IS profession, Neill said at a recent meeting of the Solitor for Information Management's Boston chapter. "We must learn to cope chapter, "We must learn to cope the charge as a constant," Neill said. What lided of change! Neill stressed that the top IS essentire must be the

tudes toward the IS function, both within the IS function and outside of it.
"The challenge is, how do you get poople to change in order to get the most benefit from the technology?" he said.

While that issue usually

into corporate strategy, Neill said that IS execs are changing their own thinking MIS itself is already ori

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Artificial Neural Networks Sambor, Setts Cles, Call., July 16-12 — Contact: Institute in Computer Sci-esco, University of California Extension, Sects Cree. Call.

errer na application decod Sombor for smort. Sets Chrs. Call. July 10-14 — Con-tor is Computer Science, University of California , Sens Crus. Call. 95064.

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ware seas remain much the same. Poor product releases, inexperienced and ineffective customer support, and technological inflexibility riddle the mainframe software giants. The hidden costs of software and support still lurk beneath the surface. And changes decreed by IBM -- such as SAA -make for even rougher seas ahead.

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Apple-linked group kicks off

CHICAGO - If you are an information systems professional managing more than 100 Macintosh computers, MACIS

The national user group, which at-tracted a mix of 150 business and university uses a to its recent inaugural meeting here, was formed late last year at the sugstion of Apple Computer, Inc., which is so providing initial logistical and finan-

also providing initial logistical and man-cial support to the group.

However, board members of MACIS (the name is derived from Managing Ap-ple Computers in Information Systems) are evidently uncomfortable with quesout whether they will be a mouth see for Apple. The board has made clear at it intends the not-for-profit group to

The primary issue for most of us is rating Apole products in multivendor

environments," said MACIS President James F. Young, Young, assistant to the president at Electronic Data Systems Corp. in Dallas, said networking and comsher's agendas; thus, the seminar gram at the inaugural conference was into two halves — host integration

nd local-area network integration.
Under its bylaws, MACIS will establis formal lines of communication with Apple in Cupertino, Calif., for influencing Apple's development of products, policies and services. MACIS will also serve in the

traditional user group role as a forum for members to share information. embers to share information.

Annual MACIS company membership
as are \$500 for one representative or

\$1,500 for up to five representatives who can attend spring and fall meetings that the group plans to hold around the coun-try. Member companies get a newsletter. try. Member companies get a newsletter, on-line information through the Applelink network and MACIS survey results.

Economies

CONTINUED FROM PAGE 61 "We want to get people in [the plaza] d onto the canino floor as soon as possi-

nting the coupon vouchers in type

its that can be optically scanned at a icker pace. "Before the computers, we re doing an average of 350 coupon re-mptions each day," Meldon said. low, we are doing an average of 928 re-mptions a day." Because of the quicker processing time, more coupons can be mailed out and more customers can be drawn in, be said.

Quick processing time was also sough thin the polymer products departmen Du Poet in Wilmington, Del., according keting and business research. He said that while the department was using overnight mail services only three or four Moreover, the overnight mail was more expensive than sending things via MCI Mail, Williamson said.

Because Du Pont was sending and re-rying project proposals and bids that often required some reworking, some pro-posals were being sent back and forth up to six times, Williamson said. The process could take up to a week using overnight mail services

"We encouraged our vendors to get an MCI account," Williamson said. "It is quite a significant time saver and not an nicant dollar saver. By sending nearly everything elec-

cally, a contract can be passed back ed forth many times in a single day, hich saves time and money, Williamson

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DATA ENTRY SYSTEM

IS delegation to Beijing is stunned by China crackdown

BY CLINTON WILDER

Several U.S. information systems prof sionals were in Beijing last month and ob-served the surge for democracy — then were stunned a few days after their return home to see that surge brutally turned back in the Tisnanmen

top information systems execu-tive at Aetna Life & Casualty. tive at Aetna Life & Casuatty, Inc., arrived in Beijing May 9 with 14 IS professionals and their glossts under the auspices of People to People Interna-tional, a U.S. organization for

ong nations.
During a 2½-week journe o three Chinese cities and Hong Kong. Sitkin's group met with Chinese prof

Sittin a group met with Chinese profes-sors, engineers and managers involved with IS through the million-member Chi-nese Association for Science and Technol-ogy. The trip's tone was set early when the group watched hordes of peacefully protesting students fill the square. "There was no sense of an imminent backinsh," Sitkin said. "The police had no

weapons, and the government actually sent buses in to shelter the students one night when it rained. It was truly a nonvio-

Sitkin said one trip highlight was m ing Wan Runnan, the 42-year-old ch man and chief executive officer of St roup Ltd., owner of a fast-growing of

of stores selling computing equipment.
"It was like a session with Steve Je or Scott McNealy," Sitkin said. "Up now, the government leaders had encouraged him, but I'm sure he'll have to be careful now. I'm sure someone in the ther that kind of activi-aldbe allowed to prosper.

ther goodwill trips have been cancelled through the end of July, and Sitkin said he expects all 1965 trips to be cancelled. "The implications for business are really quite negative," be said. "It will be a year or two be

sain, "I will be a year or two before things can warm up again."

The U.S. delegation included Ed Kri-dakorn of Whitman Corp., Alan Haesche of Southern New England Telephone, Nick' Blazensky of Travelers Insurance Co., Sandra Rur of AT&T. Lars Mattson of Digital Equipment Corp., Rach Markowitz and Li-Hwa Ting of Actna at consultant James Scott, formerly Procter & Gamble, Inc.

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PC Magazine. 10/31/88

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Paul Roemer

Failing IS grades

the Rocky fountain region revealed that neer than half of the responsents do not have a formal IS has or methodology. These ame companies have IS budgets are companies have IS budgets at exceed \$5 million.

Furthermore, those who reponded insued themselves re-ort cards describing how well sey feel they are serving their serv. Their average score was no better than a C-minus.

unern. Their average score was no better than a C-minus. These two factors should be raising red flags throughout these organizations. The sys-tems directors and their supervi-sors should be considering why sors anount be considering why millions are being spent on a ser-vice that does not have much perceived value. They should also question how it is possible to spend millions each year without a plan in place to monitor that expenditure.

Did you ever notice how difficult it is to get approval to build ficult it is to get approval to build a new plant or to get the fund-ing for a new product line? These types of endeavors seem to re-quire approval from almost ev-eryone in the organization. This makes good business sense; management wants an swers to some basic questions. If you were asking for \$10 mil-tion to build a new wides related

from to build a new widget plant, you would be prepared with an-swers to the following ques-

· How will this plant more effectively support the organiza-

. What resources will be required, and how will they be employed to achieve the desired

 Will this plant focus the orga tion's resources on the high-

est priorities? What plan or methodology will be used to ensure that the end result matches the desired

If you have done the proper amount of homework, not only will you receive all of the required approvals to start the project, but you also will likely project, but you also will likely receive the management sup-port required throughout the project a life. The same thought process ought to take place within a co-puny's IS department. All too

ne is no

cise. If this year's IS budget was \$10 million, next year's budget will be \$10 million with a per-centage increase or decrease. Why is this the case?

There are two rea There are two reasons.

First, everybody in the department seems to be busy working on various projects this year, and there is no reason to believe that they will not be just as busy working on similar endeavors

next year. However, little or no attention is paid to just how important these projects are. Second, managers tend to be rewarded based on the size of their domain. If all of the other

their domain. It all of the other department heads receive a 10% increase in their budgets, then the IS manager will also "need" a 10% increase. It is a little like eping up with the Joneses. The blame for this practice

must be shared, however. The responsibility lies in part with the executive management of the organization. If the IS dethe organization. If the IS de-partment reports to the chief fi-nancial officer or the president, these individuals should be ask-ing their IS departments what they plan to do with the next \$10 million. These same executives make the director of manufac-

turing jump through hoops to

get the widget plant approved. They ask to see projected sales figures, cash flows, staffing lev-els and blueprints. Part of the problem is that it

is easier to measure the success or failure of the widget plant. If the plant is supposed to make 1,000 widgets a month, it is pretty simple to determine h many were actually produced The president can walk through

atomi, lac., 711 Steam House, Grades Chy. 87 1858-4767

the plant and proudly display the first widget produced on a pedestal in his office. Very few presidents will proudly display the first report produced by the

new computer.

Many IS managers are in the habit of acquiring things. They perceive a need for a relational database, a fourth-generation language or new workstations. nage of new wormstands. se needs are often approved because the individual with the responsibility to authorise the expenditure rarely knows the expenditure rarely knows the right questions to sait. He is afraid to sait the SI smanger for justification out of a misplaced feer of looking uneducated.

Every firm and its IS depart meet should follow two axionax:

all you have a budget, you should have a should have a

should have a plan.

• If you do not have a plan, you

should not have a budget.
The remaining challenge is how to develop the plan. A proer planning approach should

use a structured methodology You wouldn't just alt down an knock out an IS plan anymore chan you would knock out a blueprint for a widget plant. Obviously, there are some costs associated with develop

the orga

Spotlight on 3090s in IRM contest

are you or your company using BM's 3090 in interesting ways? BM's calling for papers for its 1989 EBM 3000 Supercomputing Competition and is of fering \$200,000 in primes for papers that describe innovative applications for the 3090. The contests, open to authors in the U.S. and Canada, was desimand to imagine the development.

sciences and the humanities, the conspany said.

Individuals or teams of indi-viduals should submit papers in one of the following four catego-ries: physical sciences and math-ematics; engineering: life and health sciences; and social sci-ences, humanities and the fine

In order to win an award, a pa-per must make a significant con-tribution to the art of large-scale computational anylsis and mod-eling and demonstrate how a 3090 with a vector facility con-

3090 with a vector facility con-tributed to the project.
First prise is \$25,000, second prise is \$15,000, and third prize is \$10,000. Moreover, colleges and universities that support the work of first-prize papers in each division will be awarded \$10,000.
Contest prize papers.

\$10,000.
Contest registrations must be postmarked by Oct. 2, 1989. Winners will be announced by March 1, 1990.
For more information, contact IBM, Dept. 72/BNG, 44 S. Broadway, White Plains, N.Y. 10601-4495.

The National Computer Graphics Association is call-ing for papers and presentations for NCGA '90, which is sched-uled to be held March 19-22, 1990, in Ambiein, Call Presentations sought will re-

port on and evaluate recent de-velopments, trends and new, in-novative applications of compo-

tact Mary Geary, NCGA eduction coordinator, Suite 20

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EXECUTIVE REPORT

ORGANIZATIONAL IMPACTS OF DOWNSIZING

Changes that are more than CPU-deep

RY STAN KOLODZIEL

out corporations can also alter the IS function - in ways that overall structure.

At the most basic level, keep ag track of smaller systems oth in terms of whereabout

data center operations at CIT roup, Inc. in Livingston, NJ., nsizing means portability, "that can mean a bigger

complexity of chargeback ng new that the company's networks and network file serv-ers are handling more users in

The administrative adjust ents that Burns and Cloons

At Citibank N.A.'s Con



thank's Contorno says nets

INSIDE Learning to work with the locals The importance of context

EXECUTIVE REPORT

Challenges CONTINUED FROM PACE 71

rvices system.

Three years ago, Chrysler Financial's serstions division put pressure on its IS spartment to change its system, which it it was so slow that it was probably losing

uness for the company.

Dave Hamilton, home office opera-na specialist at Chrysler Financial, says e scope of the project also required re-fining the relationship between IS and erations at the firm.

operations at the man procedures, where we'd just a job request through the proverbial sist in the door and then wait for a reply, wasn't going to do it," Hamilton explains. IS and operations wound up working closely together, learning each other's

"It's not that we didn't know how me of the other side worked," Hamilton ps, "but we really had to get to know

each other's operations pretty the

each other's operations pretty thorough-ylo make this project a success.

A team of eight key people from oper-tions and IS collaborated. According to Gene Martyniak, branch automation proj-ect manager at Clarylaer Financial, both sides learned more about each other's op-erations by defining joint requirements and coming up with solutions together.

"It was an important learning curve for MIS and users," Martyniak observes. "Instead of one side dictating to the other, MIS got closer to what users needed,

advantage of MIS resources."
Eventually, a distributed network of AT&T 3B2 workstations and terminals was put into place at the 116 branch offices in the U.S. and Canada.

The new arrangement has had dramat-effect on productivity, Hamilton claims. ut, he says, the transformation of relans between IS and the business units

tons between IS and the business truts has been even more impressive.

"The relationship between ourselves and MIS has changed drastically." Hami-ton says. "Now, other [Chrysler Finan-cial] divisions such as credit and wholesale

T'S NOT that we didn't know how some of the other side worked, but we really had to get to know each other's operations pretty thoroughly to make this project a success."

DAVE HAMILTON CHRYSLER FINANCIAL

are interested in forming teams with IS to handle their own applications. And even-tually, many such applications will have to be integrated."

Olympic-size changes Downsizing is also changing the dynamics of IS and user relations in the government offices of the state of Washington

tral IS organization in Olympia. Wash., have Olympia, Wash., have been gradually migrating into the engineering and financial depart ments in which new apolications are coul oned with users on IBM Personal Comp

> computers, accord to Bill Storms, come er information con 'We've reached the stage at which our mainframes are use mainframes are basically as large data Storms

sters, accordi

says. "This is a major way we are reatmeter ing ourselves to better support and get closer Storms says his IS epartment now forms

various engineering and financial depart-ments to handle multiple programmine projects with and

projects with end users.

"Users previously were directed to go through the information center for new applications." he recalls, "but it proved to be less productive than IS going directly to the users to get things done."

User applications are now built faster and are more on the mark, closer to what

and compatible micro

Chrysler Financial's Hamilton (left) and Martynial

the users really need, Storms reports. But, he adds, information center employ-ees have found it necessary to train IS ees have found it necessary to train IS
programmers on many of the methods
used in programming with PC software.
There is little question that the downning of systems alters the skill requirements for IS staff. As the IS function bees more integrated into busi stegies and corporate infrastructures

IS personnel are being asked to learn not

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EXECUTIVE REPORT

ly about the businesses they service but to the intricacies of networks and PC-

"When I started in this [IS] business 20 sars ago, it was strictly IBM and Cobol." explains Rick Napier, general manager of Healthnet Corp., a Richmond, Va., ser-vice bureau. "Now, we're using techniques like [software] entity modelin CASE and PC front-end software dev opment, and then we have to tie togeth

Napier says be is also positive that downstring is changing the rules of the hiring game. "The changes brought about by downsizing generally require a new type of programmer — someone willing to try something new."

to try sometining new.

For his part, Napier says be has been hiring programmers who are generally younger and do not have the buggage of a long history of mainframes behind them. Such programmers, he claims, are more aut to be open-minded about new pro-

ming and IS organizational changes.
"You say CASE and PCs and that's

not sexy to the 15-year IMS bigot with his hands on a nel- it is serve how. ever, to young programmers who have their hands on Macintoshes and PCs," Napier says.

Downsizing in also altering the rules of organi

software application development. Mi-chael S. Scott Morton, a professor at MIT's Stoan School of Management, says that changes brought about by downsis-ing enable IS, like the corporations they serve, to quickly "freeze, unfreeze, then freeze again" around certain tasks. The reeze again arround ortrain tosas. The emphasis is no quick response to projects and flexibility in IS structures. Advances in application development tools and smiller systems are helping support these IS efforts.

CASE creations
Dennis Lockard is manager of information
resources at the recently formed Corning/Asahi Video Products Co., a joint ning/Asahi Video Products Co., a joint computer monitor manufacturing ven-ture between Corning Glass Works and Asahi, a Japanese electronics firm. Lock-ard reports that his company, which is based in Corning, N.Y., is planning to use workstations and computer-aided softworkstations and computer-aided soft-ware engineering (CASE) tools to create ew engineering applications more quick-

What Lockard wants to avoid, be says, the strict, hierarchical mainframeis the strict, hierarchical mandrane-based mode of software development used by his former employer, Corning Glass Works, With S and manufacturing facilities at Corning/Mashi being built from the ground up, Lockard says be be-lieves be has a good opportunity to utilize downsizing to change the rules of software ware development right from the begin-

I want to build [IS] teams that will work closely with our manufacturing peo-ple on various projects; they should not be ple on various projects; they should not obe bogged down by one large, monolithic project," Lockard explains. He adds that smaller systems and the software tools available today enable application devel-opment teams to decrease the time re-quired to build new applications, with a

NE THING IS clear: IS is a long way from the days when it was viewed as an isolated, back-room operation, charged with the responsibility of reducing clerical costs but basically sheltered from the economic movements of the outside world.

mum of programming manpower and costa.

Gopi Balija, until recently the director
of strategic systems development at New
York advertising firm Ogilry & Mather
and now president of consulting group.
Strategic Informatics Resources Corp. in
New York, says that be learned a great deal from forming CASE teams of and

tion builders at Ogilvy & Mather.

1 "CASE will noon be used for bu masson-critical applications, "Balip says, with workstations as a major platform. "In the past, faster computer chaps have covered the sins and omissions of MIS," be says. "The increasing speed of hardware says." In many cases for poor software development. Now, the ny cases for

erical trends, is con re's one is



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III 1980 Management Shaper America Inc (MSA)

Distributing applications can result in a new outlook for IS

BY DAVID OWEN

at do you get when you cross technodo you get waren you cross tocaso-libi savvy users with microcomput-nd minicomputers that can outstrip rice and performance of hardware cross twice their nise? Answer: A sub-tably different approach to informa-

ent type of support.

cations onto smaller, local processors, di-rectly serving the requirements of their user groups. This change from a rigid, centralized data processing function to a more fluid arrangement with independent les will require a number of organiza-nal and managerial changes on the part

Much of the processing now taking place centrally will take place locally, and the local sites will require a totally differ-

Instead of having narrowly defined job descriptions, central IS staff will become highly autonomous, with a primary role as on-call providers of assistance for local us-

ese local users, in turn, will have so quired their own specialty support staff to hundle many of the tasks that the central IS group now performs — jobs such as package selection, software development and maintenance and simple hardware

and operational management.

Because of this staff increase in the local sites, the numbers of overall IS-related staff will actually increase temporarily. However, after some time, requirements for centralized personnel will decrease and local personnel will increase until a staffine believe.

st sifting balance is achieved.

There will be great potential for over-lap and confusion between central IS and local support staffs; therefore, it will be up to IS management to clarify roles and re-sponsibilities for all personnel involved in porting and managing information

schnology.

If, for example, one group has a high gegree of expertise in selecting and im-lementing local-area networks, it makes entire that the groups to utilize this con-sense resource rather than each group da-dicating the resource for itself, at signifi-

cent cost The central IS staff will not disappear, but in this environment, it will need more than ever to have a distinct customer ser-

This has to be instilled in every men ber of the organization, because the local users will turn to the central staff only as

users was turn to the central staff only as long as it able to provide them with a more convenient, cost-effective service than they can provide for themselves. If the local users ever reach a point at which they believe they can provide their own service more effectively, rapidly or courteously, the central IS function will lose its authority in that area god the orse its authority in that area and the or-mization as a whole may become less ef-

The next thing IS man to do is take an active, rather than a passive, role in advancing this trend. Many IS departments ignore the dis-tribution of applications into the local sites, they prefer to pretend it is not a sig-

F THE LOCAL users ever reach a point at which they believe they can provide their own service more effectively, the central IS function will lose its authority in that area.

nificant issue and provide only mi

amount issue and provide only import from a central IS function that leads most user organizations to acquire their own expertise. If IS were to provide them with assistance and guidance throughout their selection, installation and use of distribut-ed solutions, they would undoubtedily ac-

cept it. Finally, IS must manage the spread of alternative processing platforms. At one level, this involves setting standards in areas such as local-area network types, packaged software solutions, documentation and testing standards. n and testing standards. At a more active level, it also inve

The trend toward moving applications to smaller, more distributed platforms is inexorable. With the proper IS initiative, the transition can be made smoother and shaped in a way that will help your org zation thrive.

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INTERVIEW

Context is everything

There are ways that downsizing can work to the advantage of IS, says Index Group's Cyrus Gibson. But this kind of move should never be made reshly.

nached properly, ang can work for han against the in-

earch, education and consulting rm Index Group, Inc. "Downsizing" has acquired a

unimonated corticipa. In management and management consolidation as a result of its frequent association with memory and a result of its frequent association with memory and a result of its frequent association with memory and a result of its frequent appropriate. The key work, the result interview with Computers, in "appropriate, the law work of its arrected interview with Computers, in "appropriate for its arrected interview with Computers and Features Entire Joseph Governing in the first may be seen a universal survey, when, in truth, it is subleign more than the conditions.

What do you think people think of when they hear the word "downsizing"? In most of the cases I've encountered, the interpretation, at least the initiative comes from

reduction or Corporate cours beneficial or at least visible in the short term. Such reductions will be a high priority for most major firms over the next five to 10 years. Actually, IS managers ought to see some opportunities in that situation.

ing the rest of the

tal for labor among the users, that is to say, belying them rea duce staff. And it may even be justifiable for it to do that at a constant or increasing staff rate

How is that likely to go over with some of the oth-or departments? It all depends on how it is sold. If

should use the resources of information systems as a means to help you achieve your goals of saffi reduction," then it could be seen as a way to help. But you are right: Initially and the way most companies are set up for budget allocations, it is more likely to be seen are a com-petitor for limited funds than as a

Learning to flex new muscles When systems shrink, IS managers find that knowledge can be power

BY ARIELLE EMMETT

Is there hope for stature wh

ose and corporate standing, durrell knows because he is a urvivor of a downsizing exper-nce in the very worst sense of the term — the kind that slices x only systems but staff and

dget.
As part of a corporate belt-hitening effort that began in many 1988, Murrell and his off at Borg-Warner Corp. itched from an IBM 4341 ainframe to a 70-station Nomainframe to a 70-etation No-vell, Inc. personal computer-based local-area network. In the process, the 10-member 15 staff was reduced by four, including the IS director and a manager [CW, May 22].

systems and programming, claims that downsizing has made life and work at Borg-Warner's corporate headquarters in Chicago more challenging.

"The prestige of our shop is still there however.

HE ultimate status symbol is when the IS manager is perceived as having a measurable impact on reve-

nues and profits." THOMAS J. O'FLAHERTY BROADVIEW ASSOCIATES

on the leading edge of technol-ogy," be says. "MIS people now look at themselves as being mselves as being

In some cases, the transition from glass house to a leaner, meaner IS shop can be traumat-

Instead, he says, m

prof

cable television company, a divi-nion of Cox Enterprises, Inc.,

1980s.
"The biggest problem of downsizing is the effect it can have on employees within the regularity of the property of the You look at that mentality, and when you decentralize and also downsize, that's not true any-

re MIPS lifting eed, many experts agree that vasizing is already changing

the essential measures of IS' worth in the corporation.

"There are still some people who can measure the

ned evaluation and reward sys r," confirms Thomas J. serty, director of research

"IS performance is more and are based on measurement, a fined objective of what can be red and the department's to meet or come close to measuring up to that goal.

are calculated on the basis of uple, an IS director

of measures of worth that their organizations are starting to emphasize. In the future, O'Flaberty predicts, managers will be measured and rewarded on the basis of their ability to improve things at the corporate bottom line.

"The ultimate status symbol in the corporation when the Seven-O'Flaherty says. "By identifying groups of customers who weren't being served at all or weren't being served enough and being able to fulfill orders quickly and accu-rately, there's real status to be gained."

gained."

Gary Kirkham, a former IS manager and now executive director at Forecasting Planning Associates, a Dallas-based consulting firm, has also noted this

Everybody's backing our new engine.

EXECUTIVE REPORT.

to be particularly difficult.
Gary Savarese, a project manager in corporate IS at Ko-dak Information Systems, a divi-sion of Eastman Kodak Co. in

g project, who payroll and

function to a local PC LAN environnt run by Ko-[CW, June 12]. This endeav-

or, be says, will

tions of Kodak's IS people in the future. "The focus of how we see IS will be different from what has been in the past," Savarese ex-plains. "IS people will really be managing the implementation of

ing our employees is a new challenge, a new arch and a new way of thinking

Gibson

up a h

it has got to be questioned. That is not to say it will be the oppo-

But today, particularly the capabilities of commu-tions and networking toc ogy, it is possible to supp

A second thing, and rel st, is that IS must acco the upers. It won't be es

in, this is an old th

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ATGT Area Technical Vanager
last Letterston

Richmond Virginia

Central Fidelity Bank is among the nation's top 100 commercial banks with 4.8 billion in assets Looling to extend les Guercesver record centraling strate, the bank commissioned as data properties and the strategies of the strategies of the properties of the properties and the properties of the properties of the properties of the properties and properties of the properties of the properties of the properties errors and the properties of the pro

Jay: Service is what bank customers expect. Faster service improves customer satisfaction and leads to more profitable relationships. When you speed up service, everyone is more productive, and we can spend more time with customers selling the bank's finanrical products.

Dean: Service and selling both depend on information. Our challenge was to provide the branches with rapid access to customer information and present that information to branch personnel in the most meaningful way. This could only be accomplished with a distributed, networked computing approach.

Jayı That's right. Our first priority was service and sales support in our branches, which meant fast, accurate retrieval and dispersal of information was crucial. AT&T's banking architecture provided that.

Dean: Early on, you talked about costeffectiveness, return on investment, and a strategy for future growth and functionality. Remember that?

Jay: With an emphasis on profitability. We had major investments in existing systems and a lot of branches. AT&T's open systems approach didn't require trade-offs or expensive host additions which is one of the masons.

you got the business. AT&T's creative alternatives surprised us.

Dean: The ease of networking AT&T WGS computers was fundamental to our proposal. We delivered maximum functionality, flexibility and reliability to every workstation in

each branch.

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Jays And StarLAN

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made the most of our
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intansible ones.

Dean: Like your customer databaseswe found ways to further develop relationships with existing customers. The applications development tools we built saved time for your developers. New products and services can now be added quickly to both platform and teller software, so service and sales can continually imnrove

Jay: Every bank employee associated with this system has

with this system has become more productive. In my twenty-three years of banking, I've never seen a vendor provide such high-quality service and support. Central Fidelity Bank and AT&T are well positioned for the future.

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r, or we just don't make it.

Optical computing

Switching the light fantastic, but not with electronics



BY LEE GRUENFELD

a systems software overhes increases, as demand fo computing power grows as as important scientifi problems become mon and more computational intractable, one thing i clear: Computers nee to get faster.

Carrent technology, however, is approaching theoretical limits. Although parallel architectures hold real promise for huge lesps in throughput power, they are cumbersome to implement electrosically. Thus, increasing speed at the component level will always be a chief concern.

One idea receiving serious: tention is to use light instead electricity throughout all pas of the computer. Computing rectly with photons rather th electrons is a giant loap beyo just compact disk/read-only memory (CD-ROM) or fiber optics, which are the current incunations of light-based, or "photonic," technology. According to

a nount Potes & Sullivan, fixpreper, opicial components will represent a \$150 million to \$200 million market by 1990 and will dominate the not peneration of computing in some by reas.

Indeed, plat we we remain indeed, plat a we make the indeed, plat and the second of contract and gallion areaside, we may noon find ourselves speaking of diffraction gratine, holograms and polarizers as well as transplancer, as our of optical transplancer, as our of optical transplancer, as our of optical transplancer is not of optical transplancer, as our of optical transplancer is not optical transplancer is not optical on the optical plant of the optical plant o

art next page).

The most obvious advantage or photonics is speed. Light in the searthan electricity. Electricing

ity in a chip travels about 500 times slower than light in a fiber and 150 times slower than light in an optical integrated circuit.

While much recent attention has focused on increasing switching speeds, this becomes progressively less relevant as moving the results of the witching optimization from place to place becomes the primary competing bottleneck. That is old of the consecuous place is circular. It minimizes the distances that signals need to juvered as well as the associated propagation lag. This is sight to downspay to potential of vogicial switches.

otential of Oggosi Switz.

Their speeds can match thos
losephano junctions, but they
erate in much more reasons
environments because the jutions require cryogens only
one conditions, whereas obs

ics work at room temperature.

Whatever the switching technology, optical computers can be made smaller, lighter and sim-

pier, all of which add up to cheap er.

While electronic pathway

must be carefully spaced to avoid secretizence, photons have so harge and thus generate so cleds as they move. No matter, ow close together they are, bottons do not interact with one nother and cine even cross paths, with no effect. Connections into he middle of optical chips can be needed to the connections of the heade directly without the need og to through a cumbersome projected pin arrangement, enbuse further decreases in site.

abling further decreases in size.

Diotonics are also immune to
outside interference. While electronics can get hit with everything from countic rays to the
puise generated by an atomic
weapon, photons do not react to
redistion.

Finally, optical computers can compute directly without the need to first transform the images via sampling, digitization and so on. However, this inst advantage may not always be available, especially in the first serveal generations of optical computers. This is because there are two basic types of optical com-

two basic types of optical computers — those that are pure an alog machines and those that ussome form of digital encoding. Analog computers are monmited to directly exploiting the unique advantages offered by

partner in the Los Augules office of
Touche Rom & Co., specialisms in tertracic IS pleasing and the application of
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The Power To Build On.

photonics, but they are limited in preci-sion to the equivalent of about eight bits. The need for much greater accuracy in most applications requires digitigation. which offers greater precision in exchange for some additional transforma-tions but a resultant reduction in performance. The argument in favor of digitization is also bolstered by the enormous amount of experience we have in building and manipulating such systems.

How will it work? As currently contemplated, optical com-puters primarily exploit the wave rather than particle properties of light, although this is more relevant for the analog than the digital machines. The parts that will make up the optical computer have few parallels in current technology, although their more cro man etations in

such computing elements as memory and storage do. in optical computi mirrors and prisms will be used to redirect beams to the right place. Beams will be computationally manipulated by such devices as beam splitters, lenses and spatial light modulators. The litter, an important feature of optical comput-ing, is the analog equivalent of the digital electronic

box that performs a known set of transformations on input to produce predictable output. Polariz ers essentially assign to the

tics that can later be "read" by analyzers. Switching, which is likely to always be needed somewhere in any computer, is accomplished by what are called optically bistable devices having three special char-

a Bestability which describes the device transitions between two discrete output intensities, providing a clear distinction between zero and one, yes and no and on earity, which refers to the fact

that as the energy level to the device in-creases or decreases, the change in out-put state is sudden at some threshold so

stays put unless something tries hard to

change it — this, of course, constitutes How would such higher level comput ing components as memory, interco tions, storage, logic and architectures

Hysteresis, which means that the threshold on the way up is higher than on the way down. In other words, the device

gle-bit memories that can be both written to (set in one of two states) and read (de to (set in the ar we sames) and termine which state the bit is in).

Another way to build such an optical flip-flop is by uning liquid crystal light valves (LCLV), which is how the resdout

valves (LCLV), which is how the readout on a digital watch is made. Light shines through a polarizer, hits the LCLV and is then reflected back out through the polar-izer. If a voltage is applied to the LCLV, the polarization of the incoming beam is rotated so that it is perpendicular to the

here photonics really ine. Not only is light faster an electricity, but the us-le bandwidth is enormous. idth is a function o which is in turn dep of the optical car one trillion hertz have already been demonstrated and could theoretically go to

100 trillion herts. Beams of light do not need to be guided by fiber outics within the controlled confines of an optical computer. Beams carrying data can be shot out across emp ty spaces with no danger of cross talk among beam Not only can the intercor nect densities be tre

free space will allow light to travel at full speed, because the fastest way to get an electron the lastest way to get an electromagnetic signal from one place to another is to let it go on its own. Multiple signals can even be sent on identical paths if they are en-coded at different frequencies, but thus far it appears that this is not considered a

far it appears that it practical construct. May storage is c the star fascinating puting the future is age will be via holog. The sea is to am storage is co

t (ascinating areas in optical com-he future method of optical stor-e via holographics. e is to arrange data into pe Continued on page 8

look in the optical computer? It is not en-tirely clear that short-term memory is What is optical computing up against?

	-	
Silicon	Low price, reliable, not sensitive to variations in manufacture and environment, ease of integration and materials	Limited switching speed, packing density and interconnection speed
Galai	Very high speed with simple production steps	Sensitive to variations to production, VLSP doubti
Tunnel diodes	High speed	Unsymmetrical switching sensitive to variations
Josephson devices	Low power consumption, high pucking density, high speed	No gain, cryogenic operating conditions
Optical bistability	High interconnection density, high speed,	Sensitive to variations, vibrations and

paralleliam

SOURCE OFFICAL COMPL BY 1990B G. PRITELSON, REPROYED WITH PERM light beam one of two binary characteris-

even needed in optical computing. Why! In a data-flow architecture, individual op-erations are performed by individual processing modules, and the output is sent tely to other modules that need the data. Thus, there is no need to store However, given the likelihood that

arly-generation optical computers will nimic the von Neumann architecture, ory is a topic worth exploring. Optically bistable devices can play a part in nory because they are essentially sin-

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How do they compute?

Photonic computation, especially in the low-precision analog mode, is vastly dif-ferent from electronic computing. It is

 Addition. To add two numbers repre-sented by two coherent beams, such as those produced by a laser, they are simply combined using a half-mirror and sent to a tector that directly measures the resul-or combined amplitudes. If the beams

subtraction method using coherent light is to shine one value beam onto a special electro-optical spatial light modulator that generates a charge throughout its crystalline structure corresponding to the characteristics or value of the beam. By reversing the voltage and thining the sec-ond beam onto the crystal, the resulting charge represents the difference between

e two beam values.

Multiplication and division. M Multiplication and division. Multi-plication is the easiest calculation of all is optical computing. When coherent light is passed through a transparency, its ampli-tude is multiplied as a function of the transmittance of that transparency. All

that is required here is to pass a beam through two transparencies representing the values to be multiplied. These can be generated on the fly by using photochro-

Division can always be exp two multiplications and can the ting because they can often shed directly in a fully parallel

Suppose wish to multiply a four-by-four array by a vector of four elements (see figure below). The vector is repre-sented by four LEDs, of which the intensi-

cy in which 16 elements have a

A special astigmatic lens distribut the light from the vector LEDs onto the columns of the holographic transpurem matrix. Another lens collects the light from each row of the matrix and focuses onto the corresponding detector. T tensities, or brightness readings, d ed in this final stage represent the ofication of the vector by the matrix.

The entire operation ha lei, regardless of the numb matrix elements. A recent of a multiplication of a 100-







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In a thicker holographic emul-on, it turns out that there is exsitivity to the direction rence beam used to re-

ord the image. A very slight sange in the beam will totally distribute the image through-at the thick film, without intering in any way with other images stored in the same volume. An exact duplicate of the beam will retrieve the image. Thus, you can use a thick-film holo-gram to store multiple images, as long as you avoid the degradas long as you avoid the degrada-on caused by storing too many nages. Assuming that we can derentiate only 1,000 such eams, a single volume could still old 125G bytes.

There are two more features There are two more features of holographic mass storage worth mentioning. First, data can be retrieved an entire page at a time, so effective data transferrates of [5 displet, car not inconceivable. Second, holograms are inherently rodundant, no any subset of the overall image contains the whole picture. The result is a high tolerance for noise and a badit-a ability to reconstruct all the data from segments succeived and a start on the second and a substitute of the second and a badit-a date runbe.

truct all the data from segments arriving a catastrophe. The Microelectronics and omputer Technology Corp. re-earch consortium based in Aus-n, Texas, is now showing its members a photogefractive vol-me holographic storage sys-em. It holds 1G byte of data in tem, it hoos to oyte or data in an array of crystalline fibers, with access times three times faster than magnetic disks and a nondestructive read capability.

in optical computing, there is no nherent need to limit logic to two states, as is required in a biary system, and computational aethodologies have already n proposed for higher order thines. Again, however, as-ting that the initial incarnaed principles, consider the elsent of binary logic. There are three bar

ods of representing di states. The first is called " states. The first is called "bright true" logic, in which a "one" is represented by high intensity and a "zero" by low intensity. The inverse is "dark true," in which a "one" is low intensity. second is orthogonal ion, in which the polar ection represents one of two

nal is lost and must be regenerat-ed. The third method is spatial location in which the location of a of light indicates the value. orthogonal pola

An example of basic logic ha ng is truth-table. In an optical vice, table entries can be holographically encoded, with each at line superimposed on each

fixed pixel positions. However, unlike in an electronic serial processor, the entire evaluation is performed in one operation and is simply a matter of the light shining through the right compo-nents and hitting a detector. Many radically new computing architectures are possible, but general-purpose, all-optical

computers are expected to be single-instruction-stream multitable entry. The output is in the form of light and dark results at ple-data-stream machines, which means they should per-form identical operations on many data streams in parallel.

Optical architectures The most obvious near-term of tical computing architecture is a hybrid one, in which optical comseets use substituted for elec-

changing the basic configura-tion. This is currently typified by the use of fiber-optic cables for transmission and CD-ROM for storage. Examples currently un-der development include optical connectors (see story page

Other architectural po ties include pipelined data flow it was developed as a remonse to



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the computing problem known as the von Neumann bottleneck, which occurs when an electronic ater spends most of its time e out where data is or where it belongs and then getting it or putting it somewhere instead of doing something use-ful with it. To make matters worse, the majority of memory is die while this search is going on. In typical data flow, namerous modules carry out ope cate with whatever other mod-ules they need to. The biggest obstacle to building data-flow machines is the difficulty of interconnection. Optical architec-tures may be able to overcome

which sets up a purposeful con-straint on the data-flow architec-

ork. This type of computer is a principal intellirn recognition and other

preclude the more accompution the more adv ng the enorm

nt on the amount of pow ed to cause a state ci vs. the rate at which the hea generated can be carried off This is called the thermal trans

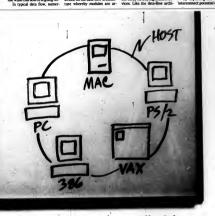
durcines, wavelengths, the wave energy equivalent of at least 1,000 photoms needs to work in concert to avoid statistical fluctuations that would

ing errors. on switches per second is more edistic, which is roughly equiv consumes less power than the optical device, the enormous practical difficulties weigh in fa-

It is also important to not that there are some density con straints owing to the minimum cross sections to which the lidisruptive diffraction effects These should be more than off set by the much larger interco

nect densities that are possible.

What is the prognosis for optical computing? Most experts say it is unlikely that we will see an all-optical computer in this cen tury. Since even some optica proponents believe going head to-head with electronic comput ers is a losing game, most work is being directed toward opto-elec-tronic hybrids. The nearest term



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COMPUTER INDUSTRY

NSIGHT

lean S. Bozman

CDC: Forever changed?

ar plastic. se see-through card was ad to advertise CDC's new marent Computing Envi-

e for end users, who could y access a Cyber 205 main e from their handy dealto intosh system. Surely they

Is Miniscribe's ship sinking?

BY RICHARD PASTORE

Illinois aims for sales tax on software

BY ELLIS BOOKER

End of an era: Cullinet VP looks back

BY NELL MARGOLIS

WESTWOOD, Mass.

For the straight story on cost-effective, high-volume printers, there's only one number to call.

Study divines image tech future

BY MICHAEL SULLIVAN-TRAINOR

tions for measured that ITS field preven-tions of the measured that ITS field preven-tions of the prevention of the second based on figure of the Maccia-vices with 550 unmbers of the Amocia-tion of Index and Its and Its and the Its and Its and Its and Its and the Its and Its and Its and Its and the Its and Its and Its and Its and the Its and It

36. Despite this difference, John Frank, o directed the study for Coopers & Lynd, agreed with the revised TBS finda. "The market is moving out much ter than our forecasts" predicted, be

e newer numbers, however, appear istic taken together with other TBS gs that assess image processing as a

mgs that assess image processing as a mology in search of acceptance. Someone needs to establish the le-nacy of this market with some major estream applications," said Robert C., one of the TBS consultants who con-





and studenters of International Business Machines Corporation © 1989 IBM Corp.

Cullinet

CONTINUED FROM PAGE 93

westen't dealing just with numbers, but with names." Papows was referring to with names." Pipows was referring to the print 1886 corporate reorganization that involved the layed of approximately 400 employees and the ultimate climina-tion of about 200 more jobs, a reshuffling of the executive deck and a dangerous in-dustry perception that Cullinet's bold but to become a multiplatform applications company instead of an IBM-locked database vendor might succeed at a brutal cost, if indeed at all.

Papows also spoke of the painful class between research-intensive technologi cal development and the financial immedi

acy of serving stockholders, which kept Cullinet "between a rock and a hard place more times than I like to remember" over

of our revenue came

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DARPA funding sheds light on U.S. innovators in high-definition TV

BY MITCH BETTS

WASHINGTON, D.C. — The U.S. Defence Advanced Research Projects Agency (DARPA), in its effort to hand out \$30

and the second s

ample, Raychern Corp. in Menio if., has joined with Xerox Corp. op HDTV display technology

not included in this group of awareness our could be included in the next round of con-tractor selections, according to Cripps. DARPA is funding HDTY projects be-cause the displays could be used in mili-tary systems. It also wants to strengther the U.S. electronics industry.

Rozman CONTINUED FROM PAGE 93

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k-drive division. It was sold to Sea-te Technologies, Inc. for \$450 million sich reduced CDC to a \$2.2 billion cor

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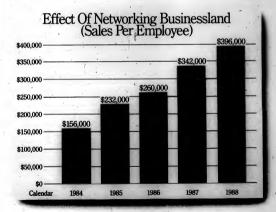
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Miniscribe

CONTINUED FROM PAGE 93

incribe's survival hinges largely on oduct, according to Vellante. Cur-emand for this type of drive is high,

he mid.
"If they had it out today, the product would do pretty well. It's not clear that that's going to be the case in aix months." Pellater motod.
Ministribe sales has Songete Technology, inc. benefing down its neck. "It's pretty clear that Songete incends at some point to perticipate in the inch-high drive market, and it will create some extremely."

However, the company's giventest dif-ficulty in the perception of its poor finan-tion of the poor financial control of the poor financial control of the poor financial control of the perception of the A spokensom for Compac Computer Compu-ter Compact and the perception of the pe

ture status of the relationship between etwo firms.* I financial prospects are urky, because of the unreliable financial ports. However, several sources expect e firm to report a financial loss for 1988 sen it does file its statements.

A company spokeswoman said that Miniscribe has requested Coopers & Ly-braud to resulfit the reports from 1986 through 1986. She said the accounting firm has not yet responded, but if the su-dits are undertaken, verifishly accurate reports outd be made public in Septem-

ber.

Allison said he is doubtful that Mini-scribe will be tilte to release verifiably ac-counter reports for those periods. Mini-scribe usai it believes it can determine that actually were on financially during the past three years, Allison said. "Biter the ig question is whether the substitu-will sign their names to [the report] and say this is exactly the way it was, or will they attach a let of qualifications to it," he added.

EXECUTIVE CORNER PTXI takes on

Interlan exec

ving, Texas-based PTXI has appointed lichael Beamett as its new president, lief executive officer and chief operating

Effective immediately, Bennett will take charge of operations for the national multivendor systems integrator and mi-crocomputer sales and service organization.

tion. With Bennett's applointment, Jim Price, PTXI co-founder and current president and CEO, will become chairman of the board. His brother Bo, co-founder



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er Bo, co-founder and current chair-man, will act as vice-chairman of the board. Bennett

comes to PTXI
from Interian,
inc., a \$53 miion, Mass.-based
supplier of local-PTXI's area network products, where he was president, CEO and COO.

Under his guidance, the organization reportedly netted annual revenue growth

Alloy Computer Products, Inc. in Franingham, Mass., announced the appointment of Richard G. Meise as president, CEO and director of the company. Meise, the former president and COO of Banyan Systems, Inc., will assume the responsibilities previously held by Richard A. Gorgens proton to his resignation from Alloy last Petrustry.

Debra Robinson is the newly appointed CEO of Touch Technologies, Inc., which is a San Diego-based developer of system software for Digital Equipment Corp. VAX/VMS-based minicomputer

systems.

Robinson is one of the founding members of Touch Technologies, which was established in 1982.

Her role will include determining the overall direction of the organization and its strong technical development re-

Gary W. Gunderson has been elected president and CEO of Computer Con-soles, Inc. (CCI), which supplies fault-tolerant listing services and intelligent contents and contents to the telltolerant listing services and intelligent network applications systems to the tele-communications industry. Headquartered in Rochester, N.Y., the company is a wholly owned subsidiary of STC PLC, a UK-based communications and informa-tion systems company.

Herndon, Va.-based C3, Inc. announced the appointment of James C. Bughes as president and CEO. He was also elected

tion. Hughes, a senior executive at BDM In-ternational, Inc. for the past 12 years, re-places former president Richard C. Lit-singer, who resigned as a result of Knoll Capital Management L.P.'s successful completion of its tender offer for C3's

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COMPUTER CAREERS

IS in search of a new drug

rmaceutical industry holds prescription for healthy systems growth



outing for reas as outsiness systems, says rry Paules, executive director ISat Ciba-Geigy Corp. in Sam-it, N.J. "The pharmaceutical dustry is research-driven," sy Paules, who oversees both ientific and business systems

undergraduate degree in sci-ce, Paules says. "Frankly, a ster's or Ph.D. is weighted y heavily," he says. "Most of

very heavily," he says, "Most of our managers in research computing have a master's and, more frequently, a Ph.D."

Clab-Gegy recruits many of its scientific computing professionals from compuses, tags and training them in computer science. Paules says, "A lot of our formatties personnell are our formatties personnell are

science. Paules says. "A lot of our [computing personnel] are grown internally."
Additionally, forces are at work to slow the pharmaceutical industry's traditionally rapid rate of growth and high profit-ability. Paules says the principal ones include the intruded op-eneric drugs, initiatives by the folderal enverament to creating histry growth may rema

Opportunities for computer ofessionals may be limited as semists and other scientists chemists and other accentions who use plantmaceutical systems become more self-reliant with tools, says Jeffrey Landau, a Radnor, Pa-based consultant and former head of systems at Pfiner, Inc.'s pharmaceutical di-

vision. As the users become more self-sufficient, opportuni-ties for computer specialists may slow, Landau says.

Probably the most exotic sci-entific application in the industry is computer-aided molecular de-sign (CAMD), which makes use

product development, pharma-ceutical computing tends to rely on packaged software from ven-dors such as Molecular Design Ltd. in San Leandro, Calif., and Polygen Corp. in Waltham, Mass. Abbott, however, has de-veloped its own graphics soft-

to Jeffrey Schubert, a scientific programmer/analyst at Abbott Laboratories in Abbott Park, III.



of computation, graphics and da-tabase technologies to study the interaction of chemical com-pounds with cells in the body. One goal of CAMD is to extrapolate proposals for new us ugs on the basis of simulations.

Among computer professionals,
CAMD has not gained recognition as a distinct field in the way
it has among chemists, according

took hold here five years ago, there were no packages we liked, so we have homegrown software." Schubert says. The programs are written in Fortran, but it is increasingly important for computer professionals in the department to know C and Unix

Perhaps the largest compo-ment of pharmaceutical comput-ing is clinical systems — those used in helping to comply with federal government standards for ensuring that new drugs are safe and effective.

to ensuring that new urups are and enderfective of easiing that must go on is absolutely enormout. I have heard of 90 volumes (of reports) representing one drug." Landau usys. Dugit from tests on drugs must be fitnistically unsigned for each problems as side effects when the drugs are used with others or by patients with ceretan concleant in the discovery of a new drug lests it be discovery of a new drug lests if years, and it can take 10 years, and years year

years to get the drug approved by regulators, Landau says. Pharmsceutical companies will likely extend these clinical sys-tems to include electronic links with government regulators, creating opportunities in com-munications, according to Davis. "I'd he surprised if it's not hap-penius in the next year or two."

The future may hold a more sweeping innovation in the de-velopment of computer models to simulate the animals used in drug testing, according to Davis. "It's not something that one clever person is going to come up with a solution for," he says "It's going to require a big in-vestment over a period of

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MARKETPLACE

Bread, milk . . . and a LAN

Everyone wants to be a VAR in the industry's fastest growing segment

BY KATY GURLEY

Increased interest in local-area networks, one of the fastest growing segments of the com-puter industry, has been accomnied by a proliferation of LAN sellers, complicating the pur-

sing process for users. Network manufacturers shipped \$3.3 billion worth of LAN hardware and software in 1988 and should deliver \$5 bilion worth in 1990, according to International Data Corp., a Framingham, Mass., market re-search firm. Meanwhile, IDC mys, the number of so-called val-ue-added resollers (VAR) that

us-account resources (VAR) that specialize in LANs has grown to 2,300 from 1,800 two years ago. Several LAN manufacturers, including is Justry leader Novell, Inc., have said in the past year that they expect to derive the bulk of their sales from reseller and OEM channels. Carol Kenney, reseller programs specialist at LAN vendor Banyan Systems, Inc. in Westboro, Mass., says most of her company's resellers are LAN specialists. "We don't specifically look for specialists

she adds, noting the growth in their number. The burgeoning ranks of LAN resellers does not neces-

sarily bode well for users, how-ever. David Brown, an indepen-dent VAR in Chicago, questions the professionalism of a rival firm in Alabama that be says sells trailer hitches along with LANa. It seems the company began sell-ing personal computers along with the hitches and then started

reseller grumbles.

piece of the action in reselling LAN hardware and software. This includes retailers, smaller systems integration firms and general-purpose VARs, accord-ing to analysts, resellers and us-ers. Additionally, consultants have started advising users on the purchase of a LAN.

distributors and the rapid growth in their number, users should take the time to determine what type of outlet is right for them and identify a reputable

selling LANs after a customer asked for one. "There are three kinds of LAN resellers out there — good, bad and worse," snoth-

Adding to the confusion, a vajockeying with LAN VARs for a piece of the action in reselling

Some resellers only sell and install LANs. Others offer networking support, and still others promise to take users from design through mainte-nance. With the variety of LAN

dealer, experts say.

tronic components manufactur-er in Smyrns, Ga. Miller sug-An alternative is to bypass re-An alternative is to bypass re-seliers by buying directly from the manufacturer. The big catch here, however, is that many of the network makers will refer all but the cream of big-spending customers to their resellers.

Firms with fewer than 100

er in Smyrmi, Ga. Miller sug-gests forming a committee to determine the questions to ask, as his company did. "Our prima-ry concern turned out to be sup-Also, ask about costs up front and remember that you are like-ly to get only what you pay for:

op a plan, advises Scott Miller,

network systems administrator at Murata Erie NA. Inc., an elec-

Be prepared to pay more for AVID BROWN, an independent VAR in Chicago, questions the professionalism of

a rival firm in Alabama that he says sells trailer hitches along with LANs.

employees and a handful of PCs are likely to buy LANa from ei-ther a retailer such as Computerland Corp. or a LAN VAR hand Cepp or a LAN VAR.
For medium belarge companies, the choice is Blachy to be among VARs, some of which specialize in JANs and smaller systems independent specialized and specialized specialized

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LAN specialists, which could save money in the long run, says Hank Durkin, a systems analyst at the Charlotte Observer in eth Carolina, who hired a LAN reseller a year ago.

LAN reselver a year ago.

"We paid a premium prix
when we went with a reselle
but the system works, and
worked right the first time
Durkin says. "The system w
installed in 2½ days; if we h tried to do it ourselves or if had gone ahead and bought fro Joe's Computer Store, we'd st be working on it." Other experienced LAN

ers, analysts and resellers of advice about choosing the ris

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consultations,

Be cautious about new companies. "You want to make sure
they'll be in business down the
road," one reseller says. Talk to past customers to de termine the reseller's integrit; and level of expertise.

Gurley is a Wellesley, Mass.-based

Marketpisce	111
Byr Scl/Swip	
Software	114
Hardware	115
Periobroils Supplies	114
Graphics/DeskTop Pub	115
Bud Proposals Real Estate	114
Time/Services	115
Training	116
	_
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The BoCoEx index on used computers Closing prices report for the week ending hane 16, 1989

	Closing price	Recent	Recent
IBM PC Model 076	\$475	\$625	\$400
XT Model 086	\$850	\$1,150	\$850
XT Model 089	\$1,175	\$1,400	\$950
AT Model 099	\$1,725	\$1,850	\$1,500
AT Model 239	\$1,800	\$2,100	\$1,775
AT Model 339	\$1,925	\$2,000	\$1,800
PS/2 Model 50	\$1,900	\$2,400	\$1,825
PS/2 Model 60	\$3,075	83,100	\$2,500
Coripan Partable I	\$600	\$750	\$335
. Pertable II	\$1,700	\$2,100	\$1,700
Pertable III	\$2,875	\$2,950	\$3,200
Portable 366	\$1,800	82,000	\$1,675
Plan	8925	\$1,300	1000
Deskyro 204	\$1,900	\$2,550	\$1,800
Dealtpro 366	- \$2,626	\$2,900	82,500
Apple Macintosh 512	\$575	, \$650	\$300
512E	\$675	\$975	\$600
Plus ·	\$950	\$1,150	\$750
п	\$3,625	\$4,175	\$3,425
Tooking 1100+	\$435	- 8000	\$725

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BY MEGAN SANTOSUS

ds with a technica am White wanted to learn more bout business and decided to ursue a master's degree. White id not want to face the financial did not want to face the financial hardship of quitting her job to at-tend school full-time, so she en-rolled in an "executive MBA" (EMBA) program that let her re-main on the job while earning the

dent of IS at Enron Corp. in Houston, also opted for the EMBA route, enrolling at the versity of Houston ar ing the program in 1967. He al-ready had a bachelor of science reasy and a bachesor or science in accounting but wanted to be on par with peers who held a ster's degree in business or a

doctorate.

EMBAs are designed for midcareer professionsls who want to
broaden their knowledge of business without interrupting their
careers. Classies typically meet
all day Friday and Saturday on al-

for two years.

sion standards differ. but most programs require 10 years of working experience and some managerial responsibility. Currently, about 5,000 students are enrolled in more than 100 EMBA programs nationwide, ac-cording to Ernie Scalberg, assisant dean for Executive and Fully ployed MBA Programs at the iversity of California at Los

The cost of an EMBA can vary from \$10,000 to \$60,000 ing on the university. The tuition tends to be greater than that of a conventional MBA program because it includes all nosable costs — books, lodging. ds and even parking permits loyers take care of the bill for a majority of students —

MBA programs, EMBA classes tend to stress practical, on-the applications, according to program directors. Statement typically work on business plans that they can apply to their

work; the concept for Adolph Cohrs Co's Coors Light beer was originally developed in as. EMBA program, says Ron Gist, director of the EMBA program at the University of Denver In addition to the greater unnding of business that she ught. White says she acquired

> E PREPARED to have no social life for two years.

interpersonal skills through her program, "I want to eventually get into management," she says,
"and the confidence and tools I ned help me communicate with managers.

An executive recruiter specializing in top-level IS positions says he thinks an MBA degree has become more a necessity than a competitive advantage.

"An MBA is no longer gold, but mandatory," says Norm Sanders, managing director of the Worldwide Information Systems Recruiting Practice at Russell Reynolds Associates, Inc. in New York "T've seen jobs come down to two people with the the end by educational creden

tials.
"Today, the biggest demand for executive talent is among people who are business-orient-ed," Sanders adds. "An IS per-son with an MBA degree demonstrates that extra push that

ALBERTO GUDE IR ENDON

cially now that information tech nology can provide a company's real competitive edge," Currently, the demand for business-oriented IS people far exceeds the supply, and there are no signs of the shortage letare no signs of the shortage let-ting up in the near future, ac-cording to Sanders. As a result, starting salaries for IS people with MBA degrees tend to be 25% higher than those of their counterparts without MBAs, he

While the rewards of getting an EMBA degree can be numer-ous, so can the drawbacks. Students spend up to 30 hours a week on course work, says Scalberg. "Programs are tough because they take all available time and energy," he says. "Typical students are really motivated to succeed and advance." Potential students should be

aware of the tremendous amount of pressure that can aculate at work and at home, according to graduates. Because of the demanding schedule, ex ed, and that can lead to tense re lations with both supervisors and peers. Some students also encounter resentment from peers who identify them as fast-track-

Be prepared to have no social life for two years, says, Students at least find moral type, students at least this has a ipport among one another in cing such hardships, he adds. The hectic schedules and per-tent sacrifices notwithstanding.

sonal sacrifices notwinstanding, the EMBA experience draws positive reviews from Gude and White. Both graduates say the relationships they formed with other students were just as edu cational as the classes Sontown is no editorial assistant at CIO

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IS shuffle: Three execs move on

BY CLINTON WILDER and ALAN J. RYAN

Ron Brassinski, the highly visi-ble wice-president of information services at Quaker Outs Co., has quietly departed from the com-

nty. Brzeninski's exit was the out notable of three transitions in the information systems pro-

ssion earlier this month. fession earlier this month.

Banking automation pioneer
John F. Fisher said he will retire
from Banc One Services Corp. at
the end of the year, and John F.
Link, director of information
systems services at Sun Co.,
signed on with a home shopping
service firm as its top IS execu-

Brzezinski, who joined Chica-go-based Quaker in 1985 as vice-president of information serrices, is currently listed as an inactive employee. He will remain on the pay-One company source erance packages are not uncommon for high-

is filled earlier this outh by Kevin Mc-ea, who had worked der Brassinski for ap-

ng the company departing.

The former vice-president said he has not made any definite plans for his future career path.

He has worked as a consultant in the past and said seturning to that field in a possibility.

Prior to joining Quaker, Besentic was manager of consulting

A ploneer er, 61, Banc One Services ov vice-president, is consid senior vice-president, is or ered one of the most progre and visionary senior execu and visionary senior executives at the use of IS. He is regarded as the pioneer of automated teller machines and bank credit cards, among ther innovations [CW, April 25,

Fisher's position will not be filled. "John won't really 're-tire," said John Russell, Banc One vice-president and director of corporate communications. "For the next five years, he will he consulting to Banc One and still will be involved with every-

thing we do.".

Link, a veteran of more to 20 years at Radnor, Pa.-be years at Radnor, Pa-based in, became nessor vice-pres-nt of IS at QVC Network, a set Chester, Pa-based home opping TV service with about 00 million in revenue.

Sun moves to a much more centralised IS strategy, according to Jack Densitue, director IS at Sun Refining and Maring Co., the largest busing Co.

it.

Most of Sun's 85-mem rporate IS staff will be tra rred to business unit function

Concerns FROM PAGE 1

Kumar said. According to Ku-mar, CA's Application Construc-tion Environment will allow the company to run multiple hard-ware, databases and software.

ware, databases and software.

The acquisition — financed
with a proposed stock awap valued at \$333 million, based on the
per-share price of CA prior to
the announcement — adds application-generation tools and vertical applications in banking, human resources, manufacturing tical applications in banking, hu-man resources, manufacturing and distribution to CA's expan-sive product catalog. More im-portantly, analysts said, the ac-quisition also buys a high-profile installed base.

Some members of that installed base were clearly concerned last week over support
and maintenance questions that
have followed previous CA acquisitions. The Si director of a
multinational Portune 500
company, who requested anorymity, said that the acquisition
will force him to explore IBMs a
will force him to explore IBMs to
regroup and look at IBMs be
asi, "because I don't think that
CA can boy IBM."
The company standardized on Some members of that in-

The company standardized on IDMS/R a few years ago, but the IS director said that he is con-cerned that his "maintenance costs will increase and support

At least one company is no longer considering buying from Cullinet. Arthur Schmersal, section manager of information systems management services at tems management services at Callinet user Loral Corp. in Litchfield Park, Arix, said last week's news put Cullinet out of the running. "We'll probably go back to square one." he said. "We've seen some changes at IBM recently that are going to make us seriously consider that now might be the time to move to DB2."

now mignt to DB2."

One long-term CA customer bad different concerns. Wayne LBell, data center manager for Dallas-based Dr. Pepper Co./
The Seven-Up Co., asked, "How resect a company that can you expect a company that keeps buying companies and product lines to be able to tie it all together, to be able to make all together, to be able to make sense of its own strategy, with-out a lot of duplication on one hand and accidental neglect on the other?" With a company the size of Cullinet to digest, Bell said, CA's service shortcomings - which be believes are in

Don't worry, be happy? Reaction from other Culli reaction from other Cullinet customers ranged from resigned to indifferent. "I'm not happy, but I'm not outraged," said IDMS/R user James Warenda, manager of detabase administration at Public Service Co. of New Hampshire in Mainchester. "Even if we were outrage enough to take action, it wou

vertant — could get worse be-fore they get better.

"Cullinet could go out of busi-ness next week, and we'd sur-vive just fine," said Haroid Cole, data processing director at the South Carolina Department of cation in Columbia. "The ware we have has been around for a long enough time to be pretty bug-free; we're not de-pendent on maintenance."

Analysis generally applauded the strategy behind the acquisi-tion. Aside from its products for IBM mainframes, Cullinet also provides CA with Enterprise/ DB, a fully relationsl high-trans-action database manager that

VAX, bar none," said Charlotte Walker, vice-president at Coun-ty Natwest USA, a consultancy in New York. Robert Anderson, vice-presi-dent at Sutro & Co., a consultan-

cy in San Francisco, said he re-garded Enterprise/DB as a garded Enterprise(DB as a pivotal purchase. According to Anderson, Callinet had been creating an interface between Enterprise(DB and IDMS/R, and a similar interface between CA's other databases would creat a potential market for Enterprise/DB of about 4,000 sites.

Past acmissitions have assessed. isitions have gener-

Gun-shy FROM PAGE 1

ble up Callinet Software, Înc., and a few days later it avaliaves graphics supplier Orthest Software, fac., which did little to change its image. In the wate of CA's latest acquisitions, industry opinion sharply diverged with regard to the impact of an ever-swelling CA on the software acctor. Whale name observers said they believe that the CA inservate well on the other water said they believe that the CA inservate will cruit of the contract will cruit as the contract will cruit the CA inservate with the CA inservate will cruit the CA inservate will be considered with the contract will be considered with the considered with the considered will be considered with the considered will be considered with the con

ally been followed by hefty cont-cutting from the ranks of ac-quired companies. Charles Wang, chairman and chief execu-tive officer of CA, said his comhas embargoed hiring until ements of Cullinet employ-However, analysts said that many as 40% of Callinet emblock within days of the deal being completed in August if share-holders of both companies ap-prove the action. One source said CA is maintaining a big sev-erance fund, including approxi-

Pederman, a partner as view Associates, an investment consultancy based in Fort Lee, N.J. "Their products, reputation and portability have already are already by the consultance of the

CA-Cultinet deal is lately to be IBM. Cultinet users who are un-sure of the shape their weater and its products will take under

mately 24 golden parachs worth about \$10 million. Cullinet founder and Ch man John Cullinane researnphasised the concern for e types that went into this de

ployees that went into this deal; doe of the terms is that CA will honor the Callinst neverance package, known to be one of the most generous in the industry. Cultimace, who returned from retirement a little more than a year ago, said be will not become part of the large firm. Sensier editors Reasmarry Hamilton, and Mell Mergelia contributed in fail weard.

commit to companies that mig end up in the CA stable, mig arrive at the same conclusion Burton said: "Now is a good tie to move to DB2."

Feeding frenzy





'Search for New Heroes' honors 11 for 'courage' at CW Smithsonian Awards

Winners pursued projects that seemed impossible — but worked





sped for the al Research Center for stification of Missing







In audience of about 500 people from astry, academia and private enterprise maded the awards banquet in New k, which was billed as a "Search for w Heroes," Computerworld Presi-t and Publisher Frits Landmann called





12th grades, "We're setting the fountion for our future," said Superintende James Wilsford, who represents a sch district that includes two of the poor areas in the state — 70% of the studen shify for subsidized school mes

quality for subsidized school meals.

• Energy, natural resources and agriculture — Sierra Misco, Inc. The Passaic River Basin Flood Warning System is a coalition of organizations tied together by a local-area network to form a gether by a local-area network to form a massive early-warning system. Flood-alert time has been reduced from the six hours necessary in 1984 — when a Passa-ic River flood caused \$350 million in prop-erty damage and four deaths — to two hours today

 Finance, insurance and real estate
 Fidelity Investments. Fidelity's — Fidelity Investments. Fidelity's on-fine investment information systems are accessible to anyone with a terminal or a Touch-Tone telephone. The systems serve two million people per week and are to easy, "even I can use them with mly Apple IIE," said David Cariseo, chairman and president of Fidelity Brokerage Series.

vices.

• Government and nonprofit — BI, Inc. and the University of Illinois (tie). Boulder, Colo.-based BI provides state correctional institutions with elec-tronic monitoring devices and voice-recognition systems for offenders serving time in their homes.

The University of Illinois' Missing Children Project uses research on aging to create high-resolution visual images of children as they might look years from the time they disappeared. Approximately 29 children have been recovered with this

method.

• Manufacturing — The University of Iowa. The University's Center for Simulation and Design Optimization of Mechanical Systems has developed a program intended to simulate performance of prototype motor vehicles operated under various conditions by a live test driver to detect safety flaws in design.

detect zafety flaws in design.

Media, arts and entertainment —
Uplinger Enterprises. Hal Uplinger
produced 1985's Lave Aid benefit concert, which used worldwide satellite technology inlusp for the first time.

Two billion people in 155 countries
saw the live broadcast, which raised \$127.

million for familier relief. The technology

has been used since the concert for simi

ortation — American Air lines. American's Sabre computer reservation system, about to celebrate its 30th anniversary, is the nation's first and biggest reservation system and the largest real-time, nongovernmental computer network. It can process more than 1,800

transactions per second.

• Wholesale and retail sales — Innovis Interactive Technology. The Tacoma, Wash.-based firm has developed an interactive, personal con store system that lets i sign decks for their hom

PICHAPD PASTORE



Richard Willmant of Bl., Inc., devel sitors the m



A Richard A. Comber Jr. (above at Bell & Houell's Document Manage ment Products Division, accepts awar for the Image Search Pius System. Ma Lembershy's (about, right) firm, Imavis Interactive Technologies, develops me improvement design systems in illed in retail building-supply store







Incaped en



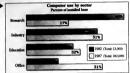


COMPUTERWORLD

TRENDS



Recent unrest in China has U.S. computer makers concerned. Although China currently represents only a sliver (13) of the world computer market, the country's millions of unautomated institutions are an enormous base of potential customers.



instelled base has risen steadily but is red by several factors, including the follows of capital for purchases, high prices caused others, high-cost domestic production and by tarrified imports, and protectional trade so that restrict foreign exchange.



up about 60% of the Chinese song importers to China, the out half of the sales in 1987. S. vendors claimed only 18% narket. Japan slipped to 28%

WEEK NEXT

W ith 44 million words, the Encyclo-paedia Britannica is one of the most famous databases in the world. The IS bases in the world. The is executive responsible for it — a serious-minded Har-vard graduate — is pursu-ing user-IS partnerships. Encyclopaedia Britannica USA's Nathan Taylor appears in Manager's Jour nal.



To keep pace with changing corporate strategies, IS must review and update its mission. The old approach to development cannot meet present needs. IS must embrace a mission statement that is based on partnership with both users and top managers. In Depth explores the challenges involved in recasting the IS mold.

CHICARIS TRAKE OCTO

INSIDE LINES

sture-switched networks in New York Life recently establish weal ireland, it w

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DEC, which has been relian on enhancements
DEC, which has been relians on enhancements
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dent of the Mice Groups the Vig. 5000, possible
6000 — DIC 20 BEC Advisory Gerrico, however,
July related of a VAX 6000 — defining a 2000 pt
mace is parcovered. At the same time, July per
mace is part of the same time, July and the same is part of the same in the sam

Look around corners

BM is working on a PS/2-based Netview offerin
names other vendors' houts but will "see around
of diagnose problems on communications lines be
coording to Wilson M, Votter, a manager of the
old Bureau of Information & Communications Inthick boyes to be one of the product's sizet users

an account from Auton-Thee" was low Oracle and Larry Ellino in two characterised the primary consister to be conquery in our PC. Server products. "Oracle "so Server products." Oracle "so Server products." Oracle "so Server products." Oracle "so Server products." Oracle "so Server products." The Schlarin server from Autono-Ties cent's selection. "The Schlarin server from Autono-Ties cent's selection. "The Schlarin server from Autono-Ties cent's selection. The Schlarin server from Autono-Ties cent's selection. Schlarin server from Server Autono-Ties cent's selection. Schlarin server from Server Schlarin server from Server Schlarin server from Server Serv Stepped on tongue
"The Stalinist server from Ashto
CEO Larry Ellison last week cha
petitor to his company's new PC

Hunger artist
McCornack & Dodge users were treat
Grand Ole Opry acts at their annual cos
last week, but some users thought the



Response Time is Money.

Poor CICS responsé time is expensive. The longer users wait, the less they get done, the more your bottom line suffers, and the more you get blamed. But good response time can also be expensive - when it's purchased through more hardware or overworked systems staff.

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process of analyzing irrelevant resource data by doing the analysis

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